LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

Farewell to Gertie

Gertie has left us. The good-humored, take-things-as-they-come, jesting Gertrude Stanton, who has been specializing on home service news and handling other assignments for ELECTRIC REFRIGERATION NEWS and REFRIGERATED FOOD NEWS during the last nine months, has returned to her home in Champaign, Ill.—there to sit on a cushion and sew a fine seam.

Friends Miss Stanton made among home service women may obtain a large and substantial bang out of the news that she is going home to get her trousseau in shape for her impending wedding (date not announced yet) with Halbert Otis Crews, Jr., of Chicago.

Gertie also plans to add the final chapters to a novel which she has been writing in spare moments for several months.

Visitors to the handsome and much-talked-about offices of the News will find, at Miss Stanton's former desk, a very pretty girl. Her name is Margaret Thompson, and she was degreed last June by the University of Michigan at Ann Arbor, where she was woman's editor of The Michigan Daily.

Don't be fooled by Miss Thompson's appearance. S. S. & G. (sweet, simple, and girlish) though she may seem, she is a go-getting reporter with those qualities so rare in a girl—initiative and resourcefulness.

* * *

Beer & Refrigeration

Now that President Hoover has moistened his public views on prohibition, it begins to seem more and more that beer may soon be purchased openly and without identification.

Several of the refrigeration industry's leading sales managers are hoping that day will come soon. Not that they have any trouble getting beer themselves, or that they are topers. But these executives believe that the relegalization of alcoholic beverages may start a boom in commercial refrigeration equipment sales.

It is thought that there will be a grand rush to establish wholesale and retail liquor outlets when beer returns. To a lot of men that will probably look like a good business—the demand is already created.

And notwithstanding the staggering number of speakeasies which are now serving the public in that capacity, it is expected that the sum total of beer-on-tap oases will be multiplied alarmingly when the governmental ban is lifted. That will open up a big new market for compressors.

Beer, in case nobody has told you, requires refrigeration. Commercial refrigerating machines, we are informed, do the job efficiently and economically.

Best of all, the "pay is good." Most business transacted with speakeasies today is on a cash basis, and distributors are planning to sell the possible big influx of legal liquor marts on the same plan.

Incidentally, we hear that a flock of sales have been made to speakeasies during the last year or so.

One of the G. E. Toppers (leading G. E. refrigerator salesmen) is an ex-bartender, and oversold his quota to a prospect list composed entirely of former buddies who are now operating without the law but with police protection.

A manufacturer who specializes in water-cooling devices finds his biggest trade among speakeasies.

* * *

Carload Petrie

Leonard and Gibson continue to be the *enfants etonnant* of the electric refrigeration industry.

Last year it was Norge which made such an amazing rise to the top portion of the heap. Norge is still burning up the track. But what Norge is doing is not unexpected; whereas the records which Gibson and Leonard are setting have surprised almost everybody, including themselves.

Out on Plymouth road where Leonard orders are received, junior executives are talking about the teamwork of Messrs. R. I. Petrie, sales manager, and A. M. Taylor, merchandising director.

Taylor peppers his organization with promotional material. He refuses to "let up." Occasionally he goes out on the road himself and fires his 16-gun oratorical salute.

Petrie, who used to be a district and regional representative for Kelvinator, lives in Pullman cars, and bags the orders himself. No chicken-feed purchases will mollify this big-time salesman. He snorts at any order expressed in terms smaller than carload lots.

At the home office he has a new nickname. It is "Carload Petrie."

* * *

Jim Nance Prognosticates

We were walking down a corridor in the Frigidaire offices at Dayton headquarters the other day when a short, muscular arm shot out from a doorway, grabbed us, and jerked us inside.

Blinking our eyes, we found ourselves in a darkened, smoke-filled room, occupied by a circle of serious-visaged men. It was like a reel from one of the "horror cycle" of movies which have just sailed through the country. Any moment we expected a clap of thunder; a clatter of broken window panes, a crash, phosphorescent eyes staring in the darkness, and a chilling moan.

Owner of the possessive arm was Jim Nance, Frigidaire sales promotion manager. Members of the solemn circle were his aides. The occasion was the laying of plans for fall and winter sales promotion. Darkness and mystery seemed to shroud their proceedings. All they lacked was a crystal ball.

For what seemed like eons of time, the full-steam-ahead Mr. Nance and his cohorts primed us with questions and pumped out a miscellany of facts, impressions, and opinions. Many of their questions were totally unanswerable. For instance:

"To what buying appeal will women be most responsive next year? Next fall? Next winter?"

"What type of contest or similar spur will get the best results out of our salesmen during cold weather?"

"Will price be more or less important as a resistance factor next year?"

What are your answers to those puzzlers? Jim has to figure them out—this far in advance. So do a number of other sales executives in the industry. How well they guess will help determine how much of a dent they make on the market in coming months.

Has some one in the back row of this audience an idea on any of these subjects? If so, speak right up, and we'll be glad to print it.

* * *

Sales Engineer

J. C. Chambers is manager of Frigidaire's up-and-coming air-conditioning department.

We are told that he has made some of the biggest sales of air-conditioning and commercial refrigeration equipment on record. For many moons he worked as a Frigidaire salesman under the direction of "Hike" Newell (now Frigidaire vice president in charge of sales) in the New England territory.

If Mr. Chambers be the prototype of the successful salesman of air conditioning, we make haste to advise distributors who have taken on lines of comfort-cooling equipment to hire their salesmen from the ranks of engineers. For Mr. Chambers seems to be preeminently an engineer. Clearly he merits the title, "sales engineer."

After an hour or two spent in his office, we were so impressed by his command of information on this new science that we were ready to swear he had the readiest command of air-conditioning knowledge with which we had ever come in contact.

Apparently that's how he sells. He bowls one over with the weight of his information on the subject, and with ideas based on that mental library of his. Ask him a question, and he may not answer it directly. Just starts off on air conditioning again. Soon one is saying to oneself:

"This fellow must be right; he knows so much about it."

Mr. Chambers' biggest worry today is what he calls, "muddled thinking on what air conditioning is."

He believes much of the advertising being done by manufacturers of air-conditioning devices is misleading. The whole subject, he believes, needs clarification.

Whereupon we again refer all and sundry to the "air-conditioning issue" (Aug. 10) of Electric Refrigeration News, and especially to the directory on page 16 of the Merchandising Section, which classifies makes of air-conditioning equipment, now on the market, by functions.

While we're on the subject of comfort cooling, we might relate that Syd Caswell, Detroit G. E. distributor, is convinced that the general public is becoming "all hepped up" over the idea of mechanical weather-making.

Syd doesn't have any air-conditioning equipment to sell, but he is merchandising G. E. "conditioned air" display cases for food markets.

Noticing his advertisements of these display cases, scores of people have thought Caswell, Inc., is distributing comfort-cooling devices. Inquiries have been pouring in as a result.

* * *

O'Keefe & Merritt

J. R. Hoskinson of O'Keefe & Merritt dropped in a few days ago. He brought the interesting information that this West Coast manufacturer of electric refrigerators has sold approximately one third of all electric refrigerators installed in southern California.

According to Mr. Hoskinson, southern California distributors of electric refrigeration went into a huddle not long ago, and came out with figures on the total number of electric refrigerators in use in the territory they are serving.

O'Keefe & Merritt men knew their own figures, of course, and found them to be about 33 per cent of the total estimated by the distributors.

(Incidentally, Kelly Courtwright, who sells G. E.'s out there, thinks that the O'Keefe & Merritt estimate is probably about right.)

From 40 to 50 complete electric refrigerators a day is the present O'Keefe & Merritt output, Mr. Hoskinson states. His concern manufactures its own cabinets.

Chiseling, the subject of a recent editorial in this sheet, was invented in California, Mr. Hoskinson believes.

He says that everybody seems to want to live out there, that it has a "low" labor market, and that competition is almost vicious in some places.

List prices apparently mean nothing in California; everything must be sold with a discount.

* * *

A Good Book

This is a free advertisement. We hope it does the Dartnell Corp. some good, for a recent publication of this concern has interested and helped us immensely.

"The Sales Strategy of John H. Patterson" is the name of this book. It was co-authored by Roy W. Johnson and Russell W. Lynch, and tells simply how John H. Patterson, founder of the National Cash Register Co., built that organization from a one-man business to a concern with annual sales of fifty million dollars.

We believe Mr. Patterson, himself, would have liked this book.

For 18 years Mr. Lynch was a successful N. C. R. salesman. For four years he was top man in the field sales organization. Some time ago he suggested to the house of Dartnell that a book telling how Mr. Patterson beat the depressions of 1893, 1907, and 1921 might help American business men through these trying times.

Mr. Johnson of the Dartnell staff undertook to gather the material (chiefly from men who had been associated with John H.) and do the actual writing of the book.

Read it, and you will be amazed to discover how many of the ideas first conceived by John H. Patterson are now being used successfully by electric refrigeration sales organizations.

For a long time we have been intending to devote an edition of "The Expansion Valve" to John Patterson and his development of the theory and technique of specialty selling. This book will help us do that.

With the help of energetic Elston Herron, we propose to dig deeply into all the available material on John Patterson (much of which is summarized and evaluated in this book) and come out with some pay dirt.

And when more space is available, you may see something on the evolution of the Patterson formula.

* * *

Correction

In response to our brief description (Expansion Valve, Aug. 3) of the unique compressor which R. E. Olds almost marketed, there come two letters explaining that the compressor was located *without* the food chamber, and not *within* it.

One of the letters was from G. S. McKee, vice president and works manager of the D. S. Ebinger Sanitary Mfg. Co., Columbus, Ohio, who assisted Mr. Olds in developing the compressor.

The second was written by S. Parlin of the United States Radio and Television Corp., Marion, Ind., who was chief inspector under Mr. McKee in the development project.

With Mr. McKee's letter is a rough sketch showing that the compressor was located back of the evaporator, separated from the food chamber by means of a layer of Dry-Zero insulation.

NOW MORE THAN 35,000

LARKIN COILS *in Daily Use!*

EACH month sees substantial gains throughout the nation. Each month finds more close, careful, investigating buyers of refrigeration who are impressed with the performance and economy features of this great coil. Each month finds manufacturers, distributors and dealers more and more thoroughly convinced that LARKIN 100% Vertical Surface Aluminum Plate Coils are a sales asset of tremendous value.

Dehydration, defrosting, fuel costs are factors which these great coils drastically cut. Coupled with trouble free operation they represent one of the greatest contributions to successful electric refrigeration.

LARKIN COILS are Standard Factory Equipment with these manufacturers who have new data available for everyone interested in solving the coil problem.

SERVEL COMMERCIAL Electric Refrigeration

WILLIAMS ICE-O-MATIC REFRIGERATION BLOOMINGTON, ILLINOIS

UNIVERSAL DETROIT, MICH.

Zerozone Lifetime Refrigeration

Electric-Automatic REFRIGERATOR PHILADELPHIA

MOHAWK REFRIGERATOR WITH THE DUOZONE UNIT

DICELER

Apex CLEVELAND, O.

100% VERTICAL SURFACE

U.S. PATENT No. 1,776,235.

LARKIN COILS

LARKIN-WARREN REFRIGERATING CORPORATION

Originators and Manufacturers :: :: ATLANTA, GEORGIA

Copeland DEPENDABLE Refrigeration DETROIT, MICH.

MAYFLOWER

Carrier Brunswick Kroeschell REFRIGERATION

KULAIR PHILADELPHIA, PA.

STARR FREEZE Electric Refrigeration

PHOENIX ICE MACHINE

H. M. ROBINS COMPANY EXPORT

WRITTEN TO BE READ ON ARRIVAL

Merchandising Section

IN TWO PARTS
PART ONE

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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THREE DOLLARS PER YEAR
TEN CENTS PER COPY

5% TAX YIELDS $27,611.65 FROM INDUSTRY IN JUNE

Collections for First Nine Days Are Reported

WASHINGTON, D. C.—Excise levies amounting to $27,611.65 were collected on electric refrigerators, in accordance with the Revenue Act of 1932, by the Federal government, between June 21, the first effective day of the Act, and June 30, the date that tax payments for that period were due, according to the first report on the new taxes made public by the Bureau of Internal Revenue.

More than $2,654,500 was collected by the Federal government on the business transacted during those nine days. Of the new taxes, the levy on bank checks was the largest revenue producer, yielding $1,094,287 for the period.

The Federal gasoline tax of one cent a gallon ranks second among the new taxes with $539,461, and the tax on wort, malt and grape concentrates is third with $221,359.

Despite the additional $2,654,500 which it secured from its nine-day collections under the new revenue law, the Bureau of International Revenue's total tax collections during July were $12,482,790 lower than in the same month a year ago.

BANKRUPT RULING

WASHINGTON, D. C.—A manufacturer can have no deduction from his taxes, under the new excise imposts of the Revenue Act of 1932, if the customer to whom he sold a taxable article becomes bankrupt, the Bureau of Internal Revenue announced in one of a series of informal rulings recently.

In another of the informal rulings

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GEORGIA POWER CO. OPENS SUMMER RANGE CAMPAIGN

ATLANTA—With the quota set at 450 units, the summer electric range campaign of the Georgia Power Co., here, started Aug. 15, to continue for 47 working days. Westinghouse and Universal ranges are being sold.

Smallest down payment, longest terms, and lowest prices in the history of the company are features of the drive listed by the *Sales Log*, bulletin of the sales department.

Advertising on the campaign began Aug. 14 in the newspapers. Supporting this, a series of three direct-mail pieces will be sent out to approximately 4,000 prospects. A window display has been created by the display department for use in dealers' windows and on their sales floors.

As the Finish Nears

District Managers J. S. Crosson (center) and J. C. Burton (right) place bets on their Kelvinator 'Derby' favorites with Walter Jeffrey.

* * *

CHANGES MARK FIFTH WEEK OF 'HORSE RACE'

DETROIT—Many changes in positions marked the fifth week of the Kelvinator Derby sales contest, as horse after horse came up from behind to challenge the pace-makers, in the Perkins Stake Race, the third furlong of the contest.

The Perkins feature finished Aug. 20, and winners will be announced next week. The fourth and final furlong is the Mason Classic which is being run now.

At Pimlico, the fifth week, Philadelphia took the lead away from Pittsburgh, forcing the latter into second place. New York City, a newcomer to the money circle, took third position.

The Los Angeles entry, "Olympic," staged a seesaw battle with Syracuse, N. Y., running second, and St. Louis, third, at Churchill Downs.

"Huron," the South Dakota entry, proved a new threat on the Hawthorne oval. Birmingham, Ala., still holds the lead, with Indianapolis in second place, but the South Dakota horse came up to

(Concluded on Page 2, Column 1)

FORCE APPOINTED CREDIT MANAGER FOR GIBSON

GREENVILLE, Mich.—C. I. Force of Grand Rapids, Mich., has joined the Gibson Electric Refrigeration Corp. here, as credit manager.

Grunow Plans To Start Production November 1

CHICAGO—The William C. Grunow Corp. will start production of a line of electric refrigerators about Nov. 1, according to Duane Wanamaker, former advertising manager of the Grigsby-Grunow Corp., who is sales and advertising manager for the new refrigeration firm.

The refrigerating unit for the Grunow Corp. refrigerator, which is as yet unnamed, is described by Wanamaker as being of a "radical design" and unlike anything in the domestic refrigerator line now being manufactured.

The unit has been developed in a "secret" laboratory, which has been under the direction of M. W. Kenney, who was also formerly with the Grigsby-Grunow Corp.

The legal incorporation of the Grunow

(Concluded on Page 2, Column 2)

GIBSON REPRESENTATIVES CONTACT SALES OUTLETS

GREENVILLE, Mich.—W. P. Hallstein, service engineer with the Gibson Electric Refrigeration Corp., here, has returned from a trip through the East, contacting dealers in Philadelphia, New York City, Baltimore, New Haven, Conn., Newark, and Utica, N. Y.

H. L. Smith, assistant service director, has returned from a 5,000-mile trip through the West. His itinerary included Milwaukee, Minneapolis, Oakland, Calif., Los Angeles, San Francisco, Salt Lake City, Utah, Denver and Omaha.

W. R. Marshall, director of advertising and sales promotion, traveled through the South and East. He stopped in Chattanooga, Tenn., Atlanta, Ga., Richmond, Va., Philadelphia, New Haven, Conn., Albany, N. Y., Rochester, N. Y., and Pittsburgh.

In remote sections of Tennessee, Kentucky, Georgia, North Carolina and Virginia, electric refrigerators were on display in almost every village and cross-roads store, says Marshall.

STEWART-WARNER DEALERS HOLD COOKING SCHOOLS

CHICAGO—A series of three-day cooking schools is being conducted in several New York cities by Mrs. Edith Ault, home economist specializing in Cuisine Froid.

The Mount Vernon Plumbing Supply Co., 196 Stevens Ave., Mount Vernon, N. Y., and Yonkers Plumbing Supply Co., 35 Central Ave., White Plains, N. Y., Stewart-Warner dealers, are sponsoring Mrs. Ault's demonstrations during the month of August.

'Ice Attendant'

DENVER—The ice man is going to be an "ice attendant" from now on—at least in the Rocky Mountain territory.

Ice company executives from seven Rocky Mountain states decided at their recent annual meeting to replace the black shirted, tong-carrying ice man with an "ice attendant" who will be equipped with white uniform, ornamented with shiny brass buttons. He'll carry his ice in a black satchel, so that it can't drip.

And he'll lay a mat out in front of the ice box so that he can chip the ice cake to fit the box without getting the ice shavings on the floor.

SALESMEN RACE IN REX COLE 'OLYMPICS'

By George F. Taubeneck

TRAVERS ISLAND, N. Y.—Almost perfect weather, hotly contested track and field events, a rousing series of baseball games, a big shore dinner plus plenty of refreshments throughout the day, and a practiced host who was in the best of spirits, all combined to make the Rex Cole Olympic Games, held at the New York Athletic Club here Wednesday, Aug. 17, a whiz of an outing.

Salesmen for Rex Cole, Inc., G. E. distributor in metropolitan New York, who sold 80 per cent or more of their quotas during July, were eligible to attend the outing and compete in the various events, for winning and placing in which the salesmen received gold pieces.

Preceding the track and field events came a parade of contestants and guests around the field, led by Lieut. Sullivan and his regimental band (official G. E. Association Island camp band), which played the rest of the day.

Came then a few short speeches by the host, Rex Cole, General Manager Robert Stevenson, E. H. Campbell, sales promotion manager, and the following executives from the General Electric refrigeration department at Cleveland:

M. F. Mahony, merchandising manager; A. M. Sweeney, production manager; and Jean De Jen, contest manager.

Also present from Cleveland headquarters were Walter Daily, advertising

(Concluded on Page 2, Column 3)

HOTPOINT ANNOUNCES FALL RANGE SALES CAMPAIGN

CHICAGO—The first announcement of the Hotpoint fall range sales activities, which will include the Christmas Range Campaign, was made at a meeting held Monday, Aug. 22, in the "little theater" in the offices of the Edison General Electric Appliance Co. of Chicago.

The Chicago meeting was the first of a series of four such gatherings planned to acquaint home office organizations and field men with details concerning quotas, advertising programs, and sales training.

The three other meetings are to be held Friday, Aug. 26, in New York City, Salt Lake City, and Nashville, Tenn.

GIBSON CO. JOINS NEMA; RE-ELECT L. RUTHENBURG

Eleven Manufacturers Now Members of Association

By F. M. Cockrell

CHICAGO—Good fellowship and impassioned oratory, with quick flights from tears to jeers, marked the informal dinner which closed the monthly meeting of the Refrigeration Division of National Electrical Manufacturers Association held in an air-conditioned banquet room at the Congress Hotel Tuesday, Aug. 16. The Grigsby-Grunow Co., manufacturer of the Majestic electric refrigerator, was host.

Gibson Electric Refrigerator Co. of Greenville, Mich., represented by Charles Gibson and Frank S. Gibson, Jr., was admitted to the Nema group, making the eleventh concern now holding membership in the organization.

Louis Ruthenburg, president of Copeland Products Co., was re-elected chairman for another year. A report of the business transacted at the executive sessions will not be available for publication until released by the headquarters office in New York, in accordance with the custom established by the association. Representatives of the press are not admitted to these sessions.

Guarantees Cause Dispute

If there was any reconciliation effected between the executives who have long been at odds over important questions of industry policy, it was not revealed by the aftermath of conversation at the dinner. Apparently the matters of long-term guarantees, low-price competition, and the status of F-12 as a safe refrigerant are still subjects of argument and dissention.

Advance information regarding Nema sales statistics for July indicates that shipments to distributors and dealers took a big drop last month in accord-

(Concluded on Page 2, Column 5)

NEMA MOVES OFFICES TO R. C. A. BUILDING, NEW YORK

NEW YORK CITY—The offices of the National Electrical Manufacturers Association are being moved to the Radio Corp. of America building on the southwest corner of Lexington Ave. and Fifty-first St., here.

This change of location is made primarily in the interests of economy, according to Nema officials. The new quarters will occupy the entire eighteenth floor of the R.C.A. building and will afford more space than the present offices.

The additional floor space thus secured provides for adjoining meeting rooms in addition to a more spacious board room. Adequate space will be allotted to provide for the accommodation of all trade extension activities of the association.

Conventional Unit Shown At Meeting of Caswell Men

By Elston D. Herron

DETROIT—Assembled for their monthly meeting Aug. 18, members of the organization of Caswell, Inc., Michigan General Electric distributor, were introduced to the new G. E. conventional electric refrigerator, learned of a new 30-day free trial plan for selling Monitor Top units, and heard outlined the method for selling G. E. kitchen equipment through the plan of the General Electric Kitchen Institute.

A short skit was used to present the conventional model to the audience. Charles Blackburn, Caswell product manager, then discussed the unit, and pointed out its features.

Following the discussion of specifications by Blackburn, another playlet was used to show what the relationship between the new unit and the Monitor Top refrigerator will be in G. E. sales organizations.

The skit consisted chiefly of a conversation between the conventional model and the Monitor Top. The newcomer enumerated its features, and finally won the friendship of the somewhat dubious Monitor Top by assuring the latter that cooperation, not competition, is the youngster's aim. The "older brother" closed the playlet with these significant words: "All right. You'll be a helper. But remember, I'm still the boss."

Fred Clinton, sales supervisor of Caswell, Inc., then gave a demonstration of how the new refrigerator may be used to best advantage by salesmen—chiefly as a means of attracting prospects who want to buy a low-priced unit, and then as a basis for pointing out the superiorities of the Monitor Top.

Regarding this demonstration, Sid Caswell pointed out, however, that the newcomer is not to be used for this purpose alone, but only where it is believed a Monitor Top unit can be sold by contrasting it with its more inexpensive brother.

He announced that salesmen will be paid a straight 10 per cent commission for each sale of the new unit, and that

(Concluded on Page 2, Column 2)

Hawaiians Place Fruits, Leis In 2,250,000th Frigidaire

HONOLULU, Hawaii—In the presence of 500 guests who visited the *S.S. President Pierce* to pay their respects to the 2,250,000th Frigidaire, public officials of the islands extended a welcome to the round-the-world refrigerator on its stop at this port.

A reception for distinguished citizens was held aboard the steamship, and the entire program was broadcast over Station KGU. The ship's orchestra played between speeches, and hula girls contributed to the entertainment.

Among those on the program were Mayor Fred Wright; Raymond C. Brown, secretary of the territory; Wallace R. Farrington, former governor; Captain W. G. Nelson of the *President Pierce* and C. C. von Hamm, president of the von Hamm-Young Co., Frigidaire distributor.

The round-the-world refrigerator was decorated with a carnation lei, and the crest of the manufacturer was placed on the wall above the cabinet.

At the conclusion of the ceremonies a basket of Hawaiian fruits and leis was presented to the captain to be entrusted to safe-keeping in the refrigerator until it reached its next port of call.

The von Hamm-Young Co. took advantage of the visit of the 2,250,000th Frigidaire to make it the basis of an aggressive promotional campaign.

Seventy-five of the leading officials and business men of Honolulu were invited by special letter to be present at the reception. In addition, liberal newspaper space was used to extend an invitation to the general public. Passes to the steamship were given out to those who called at the salesroom to ask for them.

More than 500 passes were taken up at the gang plank and several hundred additional visitors were admitted to the ceremonies without credentials.

Twenty-five prospects were picked up at the reception ceremony, and one sale was actually closed aboard the *President Pierce*. In addition there has been an increase in showroom attendance, according to R. A. Anderson, manager of the company's refrigerator division.

CHANGES MARK FIFTH WEEK OF 'HORSE RACE'

(Concluded from Page 1, Column 2)

third position and was pushing the leaders.

Clarksburg, W. Va., has led throughout most of the race on the Belmont track. Poughkeepsie, N. Y., seemed to be its most formidable rival, racing well up from the start. Peoria, Ill., and Wheeling, W. Va., were tied in third place.

Little Rock, Ark., still had the edge in the battle at Latonia, but Hagerstown, Md., was still fighting. Alabama Power tied with Huntington, W. Va., in third position.

Charleston, S. C., was the favorite on the Washington Park track, having taken the lead from Welch, W. Va., and forcing the Virginia entry into second place. The real dark horse on this track was the entry from Kalamazoo, Mich. This one entered the race late but is showing his mettle by coming up from seventeenth place to take third position away from Fernwood.

Nashville, Tenn., held the lead on the Laurel oval. Hazelton, Pa., in second place, was fighting off a challenge from Phoenix, Ariz., in third.

Casper, Wyo., was still in command of the Fairmont track. Tampa, Fla., came all the way from seventh place to take the second position. Gulfport, Miss., was still running the same even pace in third position it had maintained from the start.

Fort Worth, Tex., was still out in front at Bowie. Erie, Pa., and Norfolk, Va., were fighting it out for second place and were running neck and neck behind the Texan entry.

Denver, the winner last year, is out for another record at Arlington Park. Wiswell, Chicago, was in second place, and Alexandria, Va., was third.

Racing Stewards Get Prizes

Throughout this derby, racing stewards in all distributors' territories have organized and conducted the derby. Below is a list of 15 of these men and women who in the opinion of the judges have done an outstanding job during this contest. Each one will receive a fountain pen desk set as a token of appreciation from the derby headquarters.

Miss Elizabeth Fitzpatrick, Thurman & Boone, Roanoke, Va.; F. Elvig, Northwestern Public Service Co., Huron, S. D.; N. J. Lipking, Kelvinator Pacific Co., Los Angeles; C. A. Stevens, Public Service Electric & Gas Co., Newark; M. Sailors, Public Service Co. of Colorado, Denver.

Mrs. E. Johnstone, Casper Supply Co., Casper, Wyo.; Harry Nordberg, Western Kelvinator Co., Kansas City, Mo.; Miss Zelpha Poujade, Philip Werelein, Ltd., New Orleans; F. K. Myers, Jr., South Carolina Power Co., Charleston, S. C.; D. L. Cartland, Wiswell Radio Co., Chicago.

D. Huffman, Williams Hardware Co., Clarksburg, W. Va.; Miss Mildred Stout, Walker Hardware Co., Peoria, Ill.; Miss E. Kirk, Consolidated Gas & Electric Co., Baltimore; J. Hoey, Raymond Rosen Co., Philadelphia, and Miss B. McKinnon, Post & Lester Co., Providence, R. I.

McCORD

Domestic

EVAPORATORS

Automatic defrosting between cycles of McCord fin tube type refrigeration cooling surface assures constant temperatures and minimum dehydration.

PRICES ON REQUEST

McCord Radiator & Mfg. Co.
DETROIT

Distributor Shows New G. E. Unit

(Concluded from Page 1, Column 2)

it will be introduced to Michigan dealer organizations through a series of regional meetings starting Aug. 29. There will be no national advertising of the conventional model, he said.

The condensing unit in the new refrigerator is located above the food chamber. It embodies an external motor and belt-driven compressor. The motor is of the capacitor type, and requires oiling twice a year, according to Mr. Blackburn. The compressor is driven through a bellows seal on its shaft.

Permanent Oil Supply

All moving parts of the compressor are lubricated from a permanent supply of oil by a forced-feed oiling system. Cooling of the compressor, motor, and condenser is accomplished by fans on the compressor and motor pulleys. Sulphur dioxide is the refrigerant used.

The chilling unit is constructed of rust-resisting metal. The flow of refrigerant to the chilling unit is controlled by a high side float.

Control of the refrigerator incorporates a manual switch for turning the machine on and off, an automatic arrangement for controlling the cabinet temperature, and a device for protecting the motor against overload and improper line voltage conditions. There is also an adjustment for manually raising and lowering the cabinet temperature.

5-Cu. Ft. Capacity

The cabinet, having a 5-cu. ft. net capacity, is all steel in construction, and has a one-piece, acid-resistant porcelain liner. The exterior finish is lacquer, the shelves are tinned, and the hardware is chrome plate on brass, with combination bright and satin finish. The insulation is Thermocraft, and the door and jamb strips are Textolite, held in place by aluminum screws. The refrigerator is priced at $147, f. o. b. factory.

The distributor then announced the new 30-day free trial plan for promoting sales, to go into effect immediately. By this plan, salesmen will install a Monitor Top refrigerator in the home of a prospect, and leave it there without cost to the prospect.

Leaves Bank

With the refrigerator, the salesman leaves a bank, and asks the prospect to deposit in it each day what money would otherwise be spent for ice, and that which is saved by buying larger quantities of food.

At the end of 30 days, the salesman calls again, endeavors to close the sale for the unit with the home owner, and if successful, takes the savings in the refrigerator bank as his first payment, unless the buyer wishes to make payment on other terms.

Kitchen Institute Plan

Lorin Smith, director of the General Electric Kitchen Institute, in an hour's address to the Caswellians, gave in some detail an outline of the institute's work and policies, displayed numerous newspaper and magazine stories to show where the all-electric kitchen is being used and how it is being accepted by the country, and then urged all salesmen to use the institute as a salesgetter in the future.

Frank Buten, manager of the Caswell home laundry equipment department, told the gathering that "salesmen might just as well make a clean sweep, and install laundry equipment in the basement while they were putting new appliances in the kitchen."

Shortly before the close of the meeting, Al Truax, manager of the Grand Rapids Caswell branch, with his entire sales force, was awarded a large loving cup for selling, in July, the largest percentage of quota among all of the organization's out-of-Detroit branches.

GRUNOW PLANS TO START PRODUCTION NOVEMBER 1

(Concluded from Page 1, Column 3)

Co. will be completed in the very near future, Wanamaker states. Grunow will be sole owner and will put up all the capital, according to Wanamaker. There will be no stock for sale.

Several plant sites in the Clearing district, manufacturing center on Chicago's southwest side, have been inspected; and it is probable that the Grunow Corp. will locate its plant and offices in that locale, Wanamaker says. Temporary offices have been set up in the Bell building at 307 N. Michigan Ave.

In addition to the appointment of Wanamaker as sales and advertising manager, Earl W. Mackey, Charles Henry, E. D. Coots and A. R. Peary have been named to executive or supervisory offices in the Grunow Corp.

Distribution of the new refrigerator will be through distributor and dealer set-ups much like those now being operated by the leading manufacturers of electric refrigerators. Mr. Wanamaker has been active during the past few months in building up his distribution set-up in the larger centers through personal contact, and states that the distribution set-up, as far as central marketing points is concerned, is practically complete.

$500,000 Team

Cuno Perlmuter and Richard Valleau, Frigidaire apartment salesmen, sold $515,200 worth of equipment in six months.

Salesmen Race for Prizes In Rex Cole 'Olympic' Games

(Concluded from Page 1, Column 4)

and sales promotion manager; George Kobick, apartment house division manager; Walter Landmesser, commercial division manager; A. A. Uhalt, dealer division manager; and Harold Hulett, commercial engineer.

Fred Harvey, eastern G. E. field representative, and Ben Allen, southern G. E. representative, were on hand; as were Lou Maxon, Sid Egan, and Duane Jones of Maxon, Inc., advertising agency which has the G. E. refrigerator and range accounts.

Track, Field Events

Track and field events occupied the morning, and were run off in the following order:

Quoits, shuffleboard, 50-yard dash (trial heats), fat men's race, 12-pound shot put, shoe race, potato race (trial heats), standing broad jump, 50-yard dash (semi-final heats), baseball throw, three-legged race, 50-yard dash (final heat), potato race (final heat), and interdepartmental relay.

After a lengthy interval for the shore dinner and cigars—enlivened by the unexpected presence of a bride, groom, and wedding party in full regalia—the retail and commercial division baseball teams took the field for a three-inning baseball game, which the retailers won handily, 5 to 0.

Next on the diamond were nines representing the apartment house and wholesale divisions. The apartment house team won, 4 to 1.

Retail, Apartment Game

For five innings, then, the retail and apartment house clubs battled, fought, scrapped, and argued for the organization championship, which was finally won by the apartment house team, 13 to 12.

Rex Cole, himself, threw the first ball; and acted as pinch-hitter for the apartment house team in the last half of the fourth inning of the championship tilt.

(For more complete details of these baseball games, as well as the track and field events, see "The Expansion Valve" on page 4 of this issue.)

C. S. Witherspoon was high-point man, with a first place in the fat men's race, a first in the 12-lb. shot put, second in the shoe race, and second in the baseball throw.

C. S. Reinhardt and W. Fletcher tied for second in individual honors. Reinhardt took first place in the 50-yard dash, and was a member of the winning team in the three-legged race. W. Fletcher took first in quoits, and was on the winning shuffleboard team.

G. C. Stuart took first place in the baseball throw, and second in the 12-lb. shot put. H. A. Wagner came in for fourth place in the individual honors by winning a second in the 50-yard dash, and finishing in second place in the three-legged race with his partner, J. Alston.

The only other contestant to place twice in the meet was H. A. Miserocchi, who was one of the team finishing third in the three-legged race, and who finished third in the potato race.

Queens Team First

The apartment house team of the Queens division was first in team scores, with 19¼ points, while the retail team of the Staten Island division finished second with a total of 16½ points. In third place was the wholesale team of the Alfred L. Hart division, with 13 points.

A total of 12¾ points gave the commercial team of the Brooklyn and Queens division fourth place, the apartment house team of the Bronx division finishing in fifth place with 10½ points.

Other standings were as follows: wholesale team, Highlands Electric division, 5¾ points; wholesale team, Norwalk division, 5¾ points; retail team, Bay Ridge division, 5 points; retail team, Flatbush division, 5 points; apartment house team, Manhattan division, 3½ points.

Retail team, Jamaica division, 3 points; retail team, Queens Village division, 3 points; wholesale team, home equipment division, 3 points; wholesale team, White Plains division, 3 points; apartment house team, apartment house headquarters, 3 points.

Apartment house team, Brooklyn division, 2¾ points; commercial team, water cooler division, 2¼ points; retail team, Manhattan division, 2 points; wholesale team, Phillip and Ibsen division, 1½ points; and retail team, Bronx division, ½ point.

Summary:

Fat men's race—C. S. Witherspoon, first; A. Reinstein, second; E. P. Lull, third.

Twelve-lb. shot put—C. S. Witherspoon, first; G. C. Stuart, second; G. Stifter, third.

Shoe race—L. W. Ellin, first; C. S. Witherspoon, second; C. D. Cillie, third.

Standing broad jump—S. K. Moravek, first; J. J. Massimi, second; H. J. Kohl, third.

Baseball throw—G. C. Stuart, first; C. S. Witherspoon, second; J. D. Sullivan, third.

Three-legged race—C. S. Reinhardt and G. Kruse, first; H. A. Wagner and J. Alston, second; W. L. Pioselli and H. A. Miserocchi, third.

Fifty-yard dash—C. S. Reinhardt, first; H. A. Wagner, second; G. Trepess, third.

Potato race—W. Walker, first; L. P. McLean, second; H. A. Miserocchi, third.

Interdepartmental championship relay—commercial team, first; wholesale team, second; retail team, third.

Quoits—W. Fletcher, first; J. K. Kromholz, second; E. E. Losee, third.

Shuffleboard—J. Friedland and W. Fletcher, first; H. J. Poh and E. J. Blanchard, second; T. A. Skidmore and P. McCarron, third.

TWO FRIGIDAIRE SALESMEN BETTER $500,000 MARK

NEW YORK CITY—Cuno Perlmuter and Richard Valleau of the apartment house division of Frigidaire Sales Corp. here sold a half million dollars worth of electric refrigeration equipment during the first six months of 1932.

Perlmuter's sales amounted to $275,825 while those of Valleau reached a total of $239,375.

Mr. Perlmuter has been employed in his present capacity since August, 1929, and Mr. Valleau since November of 1928.

Among recent sales they have made are included: Wedgewood Realty Co., 250 units; J. H. Radlein, 200 units; Tratval Corp., 125 units; Chas. and Leo Levy, 132 units; and the Galric Co., 125 units.

REFRIGERATOR TAX YIELDS $27,611 DURING NINE DAYS

(Concluded from Page 1, Column 1)

the Bureau refuses to change its decision that the manufacturer of a taxable article may purchase another taxable article tax-free only if the second article becomes, during the process of manufacture, a tangible part of the first article.

GIBSON JOINS NEMA, REELECT RUTHENBURG

(Concluded from Page 1, Column 5)

ance with expectations. June figures went up, contrary to the usual trend, due to anticipation of the new federal tax, and the reaction made a corresponding slump in July business. Stocks in the hands of dealers are not excessive, according to Glenn Muffly of the Nema headquarters.

The fact that sales of household refrigerators by the Nema manufacturers during the first six months of 1932 were actually greater than for the same period of 1931 appears to have been a surprise to some of the companies which have encountered rough roads this year. Evidently the gains of some companies offset the losses of others to a considerable extent and with the tax spurt in June, the total sales were sufficient to set a new record for the group.

Judging from the state of mind revealed by the talks at Mr. Grigsby's dinner party the Nema executives are badly worried by the present conditions in the industry and the outlook for the future. No one seems to doubt that the public will continue to buy electric refrigerators or that the present manufacturers will continue to sell them, but the executives are obviously fearful as to whether or not the transaction can be made at a fair profit.

Question Need for Specialty Selling

In the background of the profit problem looms the question of distribution methods. One large manufacturer freely admitted that the whole selling plan of his company is now being seriously debated. Future policy depends on the company's conclusions regarding the most suitable method of reaching the present-day market. The choice lies between (1) specialty selling procedure with its wide margin for advertising and sales cost and (2) over-the-counter merchandising with its narrow margin to established dealers.

One of the difficulties confronting the manufacturers is the insistent demand of dealers for a low-priced leader which may be featured in local advertising as an answer to fly-by-night competition. Coupled with this is the insistence upon longer discounts, elimination of local service problems, wider range of models and other demands which tend to increase costs.

Lack of Agreement

To the outside observer it appears that the manufacturers are up against a set of impossible problems, with no semblance of agreement among the leaders as to what constitutes sound business and with no hope of organized constructive action to meet the situation. On one point, however, they all agree. Each one claims that if the others would be reasonable, and use sound business methods, this job would be easy.

Without knowing exactly what happens within the secret Nema sessions, it appears that the executives have no great difficulty in getting together on definite proposals for cooperative activity to benefit the entire industry. Examples of constructive action are the support of the Electric Refrigeration Bureau and the collection of monthly statistics showing sales and stocks.

Most of the endless arguments seem to be about proposals that somebody should *quit* doing something.

Opposition to New Selling Schemes

Every time one company evolves a new idea for selling electric refrigerators, the tendency is for the others to "view with alarm." The new scheme is considered a menace, at least until the others learn how to use it. Then it may be accepted even though the approval is under protest.

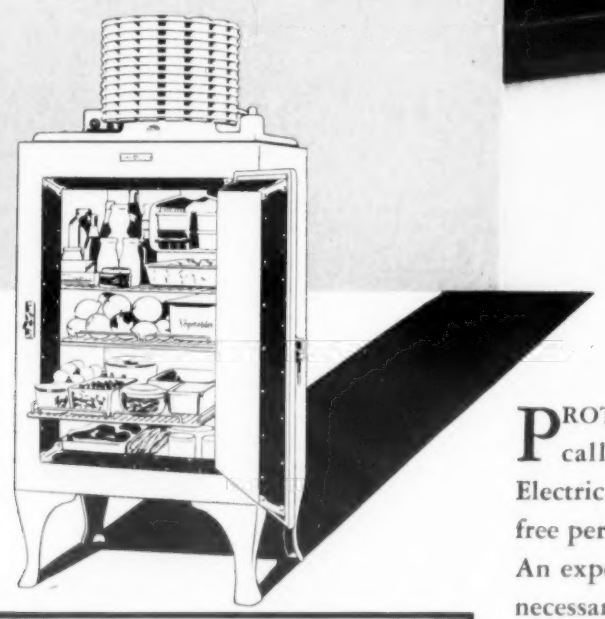
Examples which may be cited are: Long-term time-payments, low down-payments, long guarantees, coin meters, low-price leaders, etc. There was a time when 12 months was agreed upon as the ultimate limit for safe financing and when the idea of a $10 down payment would have been considered rank insanity. Most of the leaders are still fighting General Electric on the 3-year guarantee and 4-year service plan even though they "meet the competition" by the same or similar terms. Coin meters were first scorned and then embraced by some of "the best families" in the industry. Cheap models for newspaper advertising were ridiculed only a few months ago and now "everybody's doing it."

Price Cuts Caused by Fear

Opinion expressed by some of the Nema executives is that the manufacturers have "yelled before they were hurt" by low-price competition. Without waiting to see if they would lose business because of cheap models advertised as "mill end sales," and other job lot offerings, they have cut prices and skimped their quality in fear that they *might* lose some sales.

One of the results of the dinner table discussion was the acceptance of a proposition that the views of industry leaders regarding the present situation be collected for publication in Electric Refrigeration News. Executives are now being interviewed and a symposium of opinion will appear in an early issue.

Continuous TROUBLE -FREE *performance*



The Story of Quality

No. 3

Giant presses of over 400 tons capacity draw and form into shape the steel punched parts of the unit —the evaporator, float valve, and check valve shells, and the compressor case. Selected steel stock ⅛ of an inch thick is used. Several drawing operations are made and all parts heat treated in annealing ovens after each draw, to relieve all strain.

PROTECTION of profits against costly service calls is given to every retailer of General Electric Refrigerators by the continuous, trouble-free performance of the Monitor Top mechanism. An expensive servicing organization is made unnecessary. Sales volume is increased through user satisfaction and good will.

The Monitor Top mechanism of the G-E applies the electrical idea of continuous, trouble-free performance to home refrigeration. This principle is radically different from that which frankly contemplates the need for periodic adjustments and repairs. Monitor Top embodies the electrical service idea of the Mazda lamp which requires no trimming of wicks or filling with oil — of the dependable electric meter upon which the entire electrical industry is based.

The G-E Monitor Top refrigerator was developed by the world's greatest electrical manufacturing company through 15 years of intensive research. The simple mechanism is all hermetically sealed in steel, in a permanent supply of oil. It is protected against air, dirt, moisture, and tampering fingers. Cabinets are all steel.

In five short years public preference for the General Electric has placed the Monitor Top in one out of every three homes having modern refrigeration. Its continuous, uninterrupted, trouble-free performance has made an enthusiastic friend of every user, built good-will for G-E retailers and saved hundreds of thousands of dollars in service costs. General Electric Company, Electric Refrigeration Department, Section DF8, Hanna Bldg., 1400 Euclid Avenue, Cleveland, Ohio.

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

ONE OUT OF EVERY THREE IS A GENERAL ELECTRIC

LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

No Pop Bottles

"Ham" Campbell seems to think of everything.

Last Wednesday Rex Cole presented his lieutenants and star salesmen with an outing at the New York Athletic Club. Campbell, who is the Rex Cole sales promotion manager, had devised an athletic program (see story beginning on front page) which he called the "Rex Cole Olympic Games."

Campbell's choice of events was unimpeachable. So was his arrangement of details. Everything moved like a Swiss watch, and the various pieces dovetailed together like a cut-out puzzle.

It had even occurred to him that it would be wise to have no bottled drinks—usually as integral a part of an outing as grass and trees and clean air and sunburn.

Not that there were no liquid refreshments. Those who thirsted had ample opportunity to quench throat-fires. But their beverages were poured from pitchers into glasses. Nary a bottle was seen.

Wisdom of this precaution was proved late in the afternoon, when a baseball team representing the apartment house division crossed bats with the retail division nine in a five-inning grudge fight for the championship.

Previously that afternoon the retail team had eliminated the commercial division, and the apartment house club had dumped the wholesale division.

We say it was a "grudge fight" because the apartment house salesmen declare the retail salesmen brag too much, and because the retail men maintain that the apartment boys are a bunch of chiselers.

When they have a prospect just about ready to reach for a pen, they complain, likely as not some client of an apartment man will turn out to be a friend of the prospect, and will get a refrigerator for him at a discount—as a part of a quantity order.

(Recently this situation has been rectified by the stipulation that in such cases the apartment salesman must reach into his pocket and pay a five per cent commission to the retail salesman who had worked on the prospect.)

All went swimmingly until the first half of the fifth. Retail men had collected two runs in the first, but somehow didn't find a chance to visit the plate in the next three innings.

Andy Zoltac, retail salesman from Flushing, featured the first-inning attack by making a clean steal home, after successfully pilfering second and third.

Two apartment house runners crossed the plate in the first, two more in the third, and five in the fourth—making the scoreboard show a tally of 9 to 2 in their favor. It was only Paul Hichborn's persuasiveness that kept the apartment team on the field to give retail batters their last chance.

In that hectic first half of the fifth, however, the retailers jimmied the apartment lads for 10 runs!

Fully half a dozen times during that period—when the retailers were circling the bases by every unorthodox method but via garbage-can chariot a la Four Marx Bros.—the game was stopped by a near riot over an umpire's decision.

If only there had been some bottles, the umps would have been pulverized.

Umpire Roy Greene had been obtained from National League headquarters, and is on the reserve list of the senior circuit. But his inexperience was evident, for he rattled easily and totally, and went up in the air higher than balloonist August Piccard did that day.

Several times he tore off mask and cap and made wild speeches, flailing his arms like a punch-drunk middleweight. At one point he offered to bet an arguing opponent $100.00; but by the time he had counted out his money, the opponent had dissolved into the crowd.

The apartment men finally won, 13 to 12, and even the retailers seemed happy. After all, no ball game is a complete success without an argument, and every salesman there had a chance to do some long-distance talking.

Features of the game were heavy hitting and wild throwing. Many of the players had entered the baseball distance throw event in the morning, and judging from the trajectories of their heaves, they apparently still had the impression that the chief object was to hurl the ball out into the bay.

Individual Star

Individual star and high-point man of the day's athletic contests was Charley Witherspoon, apartment house manager for the Queens division. Charley won the fat men's race and the 12-pound shot put, and placed second in the shoe race and baseball throw.

He caught for the apartment house baseball team, and in the championship game he hit a home run, a triple which he stretched into another complete circuit on an overthrow, and a double.

He also crossed the plate with the winning run when Kohl's throw, in an attempt to catch Charley off third base, missed Martin by the width of one of Rex Cole's travelling-billboard trucks.

Witherspoon is a chubby, rosy-cheeked, good-natured heavyweight with shoulders and legs capable of developing a superabundance of horsepower.

He has, we are told, a seven-year-old son who already plays a mean game of tennis, is taking up golf, and packs a grown-up wallop in his right cross to the midriff.

* * *

Six-a-Day Gilligan

Outstanding showman among the competitors was C. S. Reinhardt, who won two heats and the final of the 50-yard dash, and made a couple of circus catches in the outfield for the retail baseball team. He was just the sort of man you'd expect to find in a Rex Cole gang.

In the first place, Reinhardt looked more like an athlete than almost anyone there. He is built like a blocking halfback, with powerful legs, brickwall shoulders, and a wrestler's neck (the kind which calls for a collar so big that it can be slipped on over the head).

His knees rise high when he runs, and he digs into the ground with sharp, piston-like steps. He could probably hit a line like an interstate bus.

After winning the fourth preliminary heat of the 50-yard dash with yards to spare, Reinhardt trotted down the hill to look for a shady spot. As he rounded a hill into a gravel lane, he was struck by an automobile. Medical attention was given his bruises and bumps.

Not long after this accident he came back to line up for a semi-final heat in the half-century dash. He was slow getting off his mark, and didn't catch the pacemaker until within two or three strides of the finish.

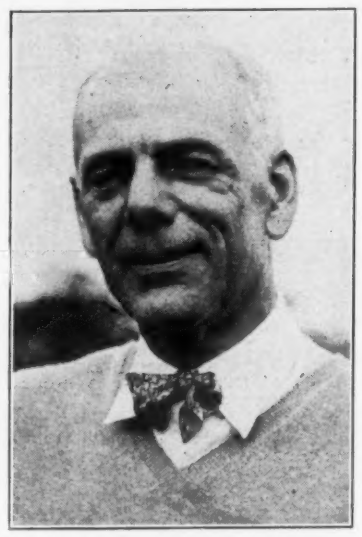
Not realizing he had inched ahead of the leader, he took a flying leap at the tape, and lit on his eyebrows in the cinders. More bruises and scratches.

A short time later he was practicing starts, and took another nose dive, knocking himself cold this time. And then he came back to win the final heat of the dash well out in front! He was the Wottaman of the day.

Reinhardt is known as "Six-a-Day Gilligan" around the Cole organization, because during the last several months he has been maintaining that a good retail salesman could sell six machines in one day if he was in top form, and that he himself was going to do it.

On the very last day of the Rex Cole Olympic Games sales contest, July 31, Reinhardt collared six prospects and obtained their orders, thereby qualifying for the athletic contests at Travers Island, and pushing himself into the Staten Island divisional leadership. It was the sort of Garrison finish he *would* make.

Mine Host



REX COLE

Big Shots Present

Your correspondent was invited to attend the "games" in an official capacity. He was to be a "judge." But there were so many "big shots" from Cleveland, New York and Points East there that the Valve felt much as he did years ago when, upon reporting for his first day of freshman football practice, he wandered by mistake into the varsity locker room and found himself undressing on a bench beside an All-American guard and three of the best backs in the Big Ten conference.

Among the distinguished guests were "Mike" Mahony, merchandising manager, A. M. Sweeney, production manager, Walter Daily, advertising and sales promotion manager, George Kobick, apartment house division manager, Al Uhalt, dealer division manager, Walter Landmesser, commercial division manager, Harold Hulett, commercial engineer, and Jean De Jen, contest manager, of the electric refrigeration department, General Electric Co., Hanna Bldg., Cleveland—period, paragraph.

Also present was buoyant Lou Maxon, head man of Maxon, Inc., who was caught short on his investments in various of the sporting enterprises during the day.

Companionable Sid Egan, a Maxon man, had a Graflex camera there, and was—with the exception of the omnimegraphoning "Ham" Campbell—probably the busiest man on the field. Some of his photographs decorate the back page of this issue.

All seemed to enjoy the outing tremendously. Mahony and Daily, who are wits of the first order, were in rare form. Here are two sample Mahony cracks:

"Business must be getting better. I saw a bond salesman getting a manicure today."

"You can't be wrong all the time. Even a stopped clock is right twice a day."

After arising at an unholy hour the Valve was driven to Travers Island—which isn't an island any more, because a connection with the mainland has been filled in—by Harold Caspers, manager of range and dishwasher sales for Rex Cole.

In the party were Robert Stevenson, vice president and general manager of Rex Cole, Inc., Fred Harvey, eastern G. E. representative, and Ben Allen, southern G. E. representative. The genial Ben, incidentally, has just authored a poem, which you may read later.

The dashing, earnest Caspers has a car which matches his own speed. It's one of these new convertible Nash models of "love at first sight" poster advertising note. The salt breeze which we were splitting on the road out to the "games" was an invigorating tonic which made any "bracer" you could name seem as tame as orange pop in comparison.

On the return trip Fred Harvey, George Kobick, and the writer were chauffeured by Joe Massimi, manager of the Cole apartment house division. At dinner that evening, Fred, George, and the oversigned settled all the problems of the industry, to our great mutual satisfaction, over tasty Tavern food.

If there's anything you want to know, any problem puzzling you, just ask us—the new Aunt Bella Dept. of the NEWS.

* * *

Quoits and Shuffleboard

Events of the day, in addition to the baseball games and 50-yard dash, included a fat men's race, 300-yard relay, 12-pound shot put, shoe race, standing broad jump, baseball throw, three-legged race, and potato race—all familiar outing, picnic, and field-day contests.

Also on the program were quoits and shuffleboard, which drew the biggest entry lists. Quoits and shuffleboard are a pair of pretty highbrow games, and because this kolyum has a bunch of readers out in the cow country where the Valve comes from, we think we'd better describe these pastimes.

Quoits is simple. It's just like horseshoes, except that small steel doughnuts are used instead of genyouwine horseshoes, and entrants aren't required to chew plug tobacco.

Shuffleboard, though, is sorta fancy. It's played on a flat, smooth, wooden or concrete surface, with wooden discs about six inches in diameter, and long, forked sticks.

At each end of the shuffleboard courts is painted a keystone. This keystone is subdivided into spaces numbered (beginning at the point and working backward), 10, 8, and 7. The crown of the keystone is labelled "10 off."

Contestants stand at one end of the court, and shove (with the forked stick) the discs toward the keystone at the other end. If a disc stops in one of the numbered spaces, the contestant chalks up that many points.

If the disc stops on a line, or misses the keystone altogether, the score is unaffected; but if the disc halts in the "10 off" space, 10 points are deducted from the score of the hapless contestant.

As soon as one man or one team has amassed 50 points, the game is over.

Silly, isn't it? But so are a lot of other games.

* * *

Rex Cole, Showman, Maker of Men

"He's a great showman." That's what everybody says about Rex Cole. It's his showmanship that people remember most, overlooking the fact that there is a more important factor in his obvious success. That factor is his technique of handling men.

Rex is really promotion director of Rex Cole, Inc. Lieutenants carry on the business. Rex keeps them happy. Most of them have been with him for years and years; some of them since the time he was president of Duplexalite.

General manager is Robert Stevenson, who was a G. E. man when that organization took over Duplexalite, and who became Rex's secretary at that time.

Stevenson is the real operator of the New York G. E. distributorship. He is respected mightily by everybody in the organization. Quiet, courteous, poised, he is strength personified.

E. Hamilton Campbell, sales promotion manager, has been with Rex since the first days of the New York G. E. distributorship. He is generally given credit for being one of the smartest sales promotion managers in the industry, and runs a department which (like his entire operation) is larger than similar departments of most manufacturers.

He is a sophisticated fellow, with a dash of humor in his make-up. Most notable is his patience with details, his ability to concentrate on a plan until it is developed as completely and carefully as if it were being submitted in a $10,000 prize contest.

Harold Caspers, director of range and dishwasher sales, is another old-timer in the Cole organization. He is youthful, fiery, full of ideas and aggressive.

Joe Massimi, highly successful apartment house division manager, also belongs to the group of early associates of Rex Cole. Morris Pipkin, wholesale manager, has been around a long time, as has Howard Jenks, commercial manager.

Paul Hichborn, retail sales manager, was a Kelvinator dealer in Jamaica, L. I., when Cole found him. Now he is one of the most colorful of the Rex Cole executives.

He is young, handsome, highly inspirational, and burning up with his enthusiasm. His grin—helped by a wide mouth and even rows of teeth, which give him a head start—is famous throughout the G. E. organization.

* * *

Banclock Plan

Right here and now is a good time to mention the Banclock plan, which Paul Hichborn is sponsoring, and which many G. E. distributors in various parts of the nation are preparing to use.

The Banclock is a coin-receiving device which looks like a clock. Its hands register the amount deposited—minute hand registering cents, hour hand registering dollars. The Banclock remains locked until it collects $10, whereupon it pops open. It will register pennies, nickels, dimes, quarters, and half dollars.

Salesmen who wish to prove to doubting prospects that a G. E. will really save them money present them with a Banclock and a G. E. refrigerator on 30 days' free trial.

The housewife is to drop the money she would have spent for ice each day into the Banclock. She also deposits in it whatever she figures she has saved on food by means of quantity purchases, Saturday bargain purchases, making frozen desserts instead of buying ice cream, etc.

At the end of the month, Paul declares, most women will have saved $10 in the Banclock. That's enough for a down payment. And the housewife continues to drop her savings into the Banclock so long as she is making payments.

If, by the end of the month, she hasn't saved the correct amount, the difference is usually so small that she makes it up without hesitancy, Hichborn finds.

* * *

Loyal Henchmen

As we have indicated before, Rex knows how to treat his men. They stick with him and by him. He pays them well, gives them ample opportunity to play, and then works the hell out of 'em.

That word, "hell," incidentally, is the by-word of the whole Rex Cole aggregation. The Rex Cole motto seems to be: "Hell with it; get the job done." Obstacles don't matter. Odds don't matter. Excuses aren't heard. Objections are overruled. "Hell with it. Sell 'em anyway."

We met so many interesting individuals in this gang that we couldn't possibly tell about them all or catalog the qualities which make them interesting.

We would like to mention Lawrence Hills, however. He is in charge of sales training courses for Rex, and is a university professor on the side. More than that, he impresses us as being a regular fellow. We liked him immensely.

Al Hart, the famous G. E. dealer in Patchogue, was very much in evidence. His methods and accomplishments have been publicized in the NEWS on more than one occasion, and he was accorded considerable attention by G. E. headquarters men from Cleveland.

Awarded a $1,000 prize as a divisional winner in the most recent Rex Cole sales contest, Bill Hegge also deserves notice for being the boss and leader of two of the highest-ranking salesmen of General Electric refrigerators in the world—Frank Siegmund and M. R. Reina. In a later issue we'll tell you how they operate.

Bill is as proud of those two salesmen as if they were his own sons. He has been with Rex Cole for many years, and so have they; and all three reflect the *esprit de corps* which characterizes the entire force.

* * *

Faith Baldwin's Story

Faith Baldwin's story, "Self-Made Woman," which has been running serially in *Cosmopolitan*, and which has Rex Cole (renamed "Bill Burke") for a hero, is concluded in the September issue.

In this final instalment, Rex marries the heroine, but learns she doesn't want to give up her real estate business. Calmly he lets her have her way. But smart old Rex finds the answer.

Into a nearby house moves one of Rex's old sweethearts. She has no business, and obligingly helps entertain the guests whom Rex is constantly bringing home. Gradually she begins to assume the duties of mistress of the house. Rex doesn't discourage her at all.

Jealousy gnaws at our heroine's heart, and she decides that the only way she can keep that hussy out of her house and away from Rex is to give up her business and devote her whole time to being a wife.

Brains conquer all. Thus endeth the tale.

Just Before the Battle

Two Rex Cole baseball teams take the field at Travers Island.

[redacted] REFRIGERATOR CO. PLACED IN RECEIVERSHIP

—The [redacted] Refrigerator Co. of this city, which has been marketing [redacted] electric refrigerators, was placed in the hands of a receiver on July 23 by order of the Common Pleas Court of [redacted] County.

[redacted] 1101 Third National Building, [redacted] has been named receiver.

"Orphans"

The clipping above was taken from a recent issue of one of the trade papers. And we are using it here, not to gloat over the ill-fortune of one of our contemporaries, but simply to prove a point.

A company fails to make the grade. For any of a dozen reasons it has to close its doors. Owners all over the country own the "orphans." Dealers, too, own many. Assets become liabilities. And the dealers' investment in time, money and effort shrinks to nothing. All of which emphasizes the importance of using care and sound business judgment in the selection of a franchise.

Experience and financial stability do count—in the electric refrigeration industry as in all others and the many phases of the manufacturing and marketing of electric refrigeration cannot be learned over night.

It is pertinent that Kelvinator's 18th year in the industry was Kelvinator's greatest. It is also pertinent that the Kelvinator franchise is considered one of the safest and soundest and most desirable in the industry. As evidence of this fact, *more than 1,700 new dealers* secured the Kelvinator franchise in six months.

We will gladly discuss this further with any progressive merchant who is interested in *permanent profits.* Wire or write for our representative to call. KELVINATOR CORPORATION, *14245 Plymouth Road, Detroit, Michigan. Kelvinator of Canada, Ltd., London, Ont. Kelvinator Limited, London, England.*

(534)

Kelvinator

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

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Message To Distributors

MR. DISTRIBUTOR: Are you considering the consequences when you demand lower and lower prices from your manufacturer? Are you going to force yourself out of the electric refrigeration picture? Are you going to be frightened by a temporary situation into relinquishing your hold upon a strong and growing industry?

Manufacturers tell us that you have put them into a quandary. Pressure already brought upon them during the last year has resulted in lower prices, which were effected through production economy. Engineers declare that there isn't much they can do toward making electric refrigerators (which will work) at a lower cost. The bottom in manufacturing costs apparently has been touched.

What does that leave to cut? Sales costs. Manufacturing executives are now trying to decide whether to sell their refrigerators through specialty distributing organizations which build the market; through over-the-counter jobbing outlets which, unaided by national sales promotion, supply the demand but fail to expand the market; or directly through department stores and other large retailers which move large job-lots at "clearance sales" and wreck the market.

Eliminate Distributor

Manufacturers listen to you distributors and dealers. You are their agents, their means of direct contact with the public. If you tell them that the only appeal on which electric refrigerators can be sold today is price, they are likely to believe you. And their next step—their only logical means of cutting their prices still further—is to eliminate you!

T. K. Quinn, vice president of the General Electric Co., made the following remarks at a gathering of G. E. refrigerator distributors Aug. 4 at Nela Park, Cleveland:

"Go back and tell your salesmen that price is their big enemy. When prices become low, you don't need salesmen. Just advertise the low price, tell buyers where your merchandise can be had, and let 'em come in and get it. It takes higher prices to justify salesmen's commissions."

Price the Enemy

Were Ted Quinn not so thoroughly sold on the specialty distributor-dealer setup as the best system for merchandising electrical appliances, he might have carried his reasoning a step further and declared that price is the big enemy of the distributor and dealer. Several large manufacturers today are considering ways and means of eliminating distributors and dealers from their merchandising operations. Some of the new, smaller manufacturers have already done that.

Hammering at the price of the refrigerators you are selling is also taking out of the hands of you and your brother distributors and dealers your most formidable sales weapons. Should this hammering continue, it may not be long before you, too, have nothing but a "jillopy" to sell. And while you may lose a sale now and then because a prospect happens to have a cousin who will let him have a "jillopy" at a big discount, you know as well as we do that the business of the "fly-by-nights" can't compare with the volume you are doing.

If you force your manufacturer to strip his refrigerator down to a bare skeleton, what features have you got to help convince a woman that the machine you are selling is any better than the one she can get down at the direct outlet furniture or department store at a lower price?

And if you succeed in persuading manufacturers to cut out national magazine advertising (there is a strong movement on foot now among distributors and dealers of several manufacturers to do that very thing), have you not lost the Power of a Good Name—your strongest defense against cut-price competition?

Unabsorbed Overhead

Today manufacturers are worrying about the fall and winter. The bogie-man which is disrupting their sleep might be called, "Unabsorbed Overhead." With production down, they find it necessary to maintain large and expensive staffs. If they are to progress and continue to offer refinements in their product—to say nothing of new products for you to sell—they must keep a squadron of competent engineers on the payroll. If you are to receive wise sales counsel and assistance from headquarters in answering your particular and individual problems, if you are to continue getting the help of smart sales schemes and business getters furnished you by the home office, manufacturers must spend large sums to keep sales, sales promotion, and merchandising departments functioning.

All these things have been built up at great cost over a period of time in order that YOU, as well as the manufacturer, might continue in business for a long, long time. These organizations have been perfected and geared up in order that YOU might have a head start in the race. They have given you something distinctly better to sell, and have furnished you with brilliant ideas to help sell it. Are you going to throw all these advantages away?

Replacement Market

Manufacturers who mean to *stay in business* will not be frightened into junking the good name which has been their precious heritage. They know that when the public has had its fill of cheap merchandise, there will be a big replacement business; and they want to be there with a bucket when those replacement orders start to fall. They know the public is learning that suits today are selling for half as much—and lasting one-third as long. They know that names which have stood for quality and have bred confidence over half a century are now succumbing to the cries of the cheapjohns. And the smart operators are preparing to take advantage of these falls from grace by annexing a little bit more of the "top" for themselves.

You can bank on it that the wise manufacturers are not going to be stampeded. And pleas for lower prices are leading them today, not toward junk products, but toward new methods of distribution.

Are you distributors and dealers rocking your own boats?

GLEANINGS
FROM RECENT PERIODICALS

THIS MATTER OF DEALER FINANCING

GROWTH of residence load waits today on appliance selling and appliance selling hangs in the balance. Qualms of public policy and political fears have greatly unsettled the power companies in the last year in their merchandising plans. As a result the flow of labor-saving and comfort appliances into the homes of America has slackened. The dealer becomes steadily more important in the picture and the weakness of the dealer is a problem that concerns the entire industry.

The crux of it all is instalment financing. The public has learned to buy that way and likes it. The dealer lacks capital to carry term-payment contracts. The large acceptance corporations won't bother with small paper. The power company, though ideally equipped to bill and collect, is afraid to finance the dealer because both the banker and the commissions frown on it. What to do?

After all, this is a community consideration. It has to do with living conditions in the town. The real estate men, the building and loan associations and the mortgage bankers are concerned no less than the power company and the electrical dealers, wholesalers and manufacturers. The need is to provide the people of that locality with a financing service that will enable them to equip their homes with the modern devices that contribute to the enjoyment of life. The best way would be for these several interests to cooperate in the establishment of a local acceptance corporation, in which they all participate. This local finance company to discount local small paper and rediscount with one of the large national credit companies.—*Electrical World.*

Letters from Readers

Cabinet Design

Briggs Mfg. Co.
Detroit
Aug. 16, 1932.

Editor:

Your refreshing and constructive editorial "Individuality Versus Monotony," in the July 13 issue has created so much comment in our industry that in many cases it reminds me of the old parable of the three blind men who were taken to an elephant to get a conception of what it resembled. The first man felt the leg and said the elephant was like a tree; the second grabbed his tail and compared the beast to a rope; and the third felt the trunk and said the elephant was similar to a snake.

The truth of your editorial was brought forth very forcibly by the recent advertisement of Old Dutch Cleanser in a July issue of the *Saturday Evening Post*, which pictured the prominent refrigerators on the market. If Old Dutch had not printed the names in conjunction with the illustrations, in perhaps one exception, the refrigerators would have lost their identity. Now they have as much individuality as the housewife in front of each cabinet.

Many manufacturers question the popularity of a specially designed cabinet. They have become addicted to the conventional type box and hardware. Place an artistically designed cabinet amongst a group of the plain conventional styles and note the prospective purchaser's reaction. What cabinet is immediately distinguished?

Why the refrigerator firm should not have the "identity of appearance" that is the vogue in other industries is inexplicable. Any school boy can recognize a Packard or a Ford by the eye appeal and styling exclusive with each manufacturer. Not until the advent of the electric range, did the gas range manufacturers try to combine utility with beauty of appearance. Ultimately, their product became individualized by identity.

Refrigerators, as you say, are the outgrowth of the icebox, and cabinets have been built around the equipment facilities of the manufacturer rather than the manufacturer building to an idea or a design. One correspondent states a refrigerator is a utility. Granted. But why should it be homely? Having eye appeal and identity does not detract from its utility, but certainly adds sales appeal.

Another declares, expense is a factor. But I differ, because after a company has volume, proper tooling will so reduce expenditure that better cabinets can be manufactured at less cost. Color was mentioned. Yes—it has been used before—but a coat of paint will not make a new car.

First, a properly styled cabinet posessing individuality and eye appeal must be the foundation. Then, on certain models, a limited use of color based on a study of modern kitchen vogues will show that color is acceptable.

It seems to me as if every industry is trying today to improve the quality and style of its product so as to give it character and personality individual to the manufacturer. The American Housewife is more particular today—she wants the most for her money and as a buyer, she is attracted by quality.

Yes, Mr. Editor, you have an idea worth "Following Through." A prophet is never appreciated, so the parade of wooden soldiers carries on.

EARLE E. MERRETT.

Porcelain Enamels In Various Colors

Chicago Vitreous Enamel Product Co.
Cicero, Ill.
Aug. 8, 1932.

Editor:

I have just finished reading "The Expansion Valve" in the Aug. 3 issue of ELECTRIC REFRIGERATION NEWS. Your comparison of porcelain enamel and lacquer as finishes for electric refrigerator cabinets (exterior) was naturally of interest.

The natural reaction of one who is interested in the manufacture of porcelain enamels might be to take exception to the figures presented but I notice that they are presented as opinions and the majority of us take considerable liberty in the expression of opinions.

The last statement in the brief article attracted my attention particularly and I feel that it calls for a comment. You mention "range of colors" as an advantage for lacquer as compared to porcelain enamel. It is true that the great majority of porcelain enameled refrigerators are white but the use of color in connection with other porcelain enameled products is quite common.

Porcelain enamel's possibilities in the color field are almost limitless. Countless colors and shades of color are available in plain finishes and in addition there are variety finishes such as stippling, marble-izing, wood graining and many others. Cabinet heaters, gas and electric ranges, signs, kitchenware and many other products use color and special finishes to advantage.

I am sending you a clipping from a recent magazine article showing a giant porcelain enameled electric sign, 65 ft. high by 40 ft. wide, which is porcelain enameled in 15 different colors of Lusterlite porcelain enamel. Color in porcelain enamels is important enough to our company that we maintain a complete color matching laboratory as a service to our customers.

D. B. WALTERS,
Vice president.

It Closed a Sale

Editor:

He was a hard prospect, and his choice lay between our line and that of a competitor. We were offering him $10 less for his old ice refrigerator, than the other dealer.

Finally he decided to purchase the electric refrigerator that we were selling on account of some features our machine had, and he thought that it was only fair that he tell our competitor of the choice he had made. However, when he told that he had decided upon our line, this competitor began to work on him with a reduced price.

Fortunately, I had just received a copy of ELECTRIC REFRIGERATION NEWS in which were listed the specifications and prices on all the leading makes of refrigerators. It was while looking over this list that I found this competitive dealer was selling his refrigerator $32 above the factory list price.

The competitor offered an allowance of $30 for the old ice box, so that this dealer was really allowing nothing from the actual factory list price. So when this customer returned to my store and said that my competitor had offered an extra discount of $10, and expected our firm to meet that concession inasmuch as we had originally allowed less for the ice refrigerator, I opened the trade paper and said to him:

"Here is a list of all the different makes of electric refrigerators and the prices. This is a business paper whose management has no more interest in my line than in any other line. They publish the facts. Here is my line, and the factory price listed here is exactly what I quoted to you. Here is the name of the other refrigerator and that is the list price, on the size in which you are interested. His quotation is $32 more. He is now allowing you actually $8 for your refrigerator after making the concession you speak of."

"Why," he hesitated, "at that rate I would have paid him the full price and given him my ice box for nothing if I had accepted his proposition in the first place. Now I know I don't want his refrigerator—you can put a Kelvinator in my house tomorrow."

So that's why I give credit for at least one sale to my trade paper. Probably it has been an indirect influence in the closing of many more sales. At least, I know that it pays to read ELECTRIC REFRIGERATION NEWS to keep informed about what is going on in the electric refrigeration field.

L. A. STEMLER,
Manager, Stemler Hardware Co.,
Palmerton, Pa.

COPELAND EXECUTIVE'S WIFE DIES

DETROIT—Mrs. Edwin H. Brown, wife of Edwin H. Brown, vice president and treasurer of Copeland Products, Inc., died recently at their home at 4 Lake Court, Grosse Pointe Park, after an illness of several months.

Mrs. Brown is survived by her husband, two daughters, Mrs. Thomas Cover III of Baltimore, Md., Miss Allanore S. Brown and a son, McIntosh.

CROSLEY DISTRIBUTOR FOR PENNSYLVANIA NAMED

PITTSBURGH—The Anchor Lite Appliance Co., here, recently has been appointed wholesale distributor in western Pennsylvania for Crosley radios and electric refrigerators, manufactured by the Crosley Radio Corp., according to Harold W. Goldstein, president of the Anchor Lite Appliance Co.

Clifford Betts, sales manager, invited dealers for a three-day showing at the Anchor Lite showrooms of the new Crosley radio and refrigeration line.

COPELAND APPOINTS 60 DISTRIBUTORS, DEALERS

MT. CLEMENS, Mich.—A total of 60 recently appointed Copeland distributors and dealers, covering 16 states, has just been announced by W. D. McElhinny, vice president, Copeland Products, Inc. The states included extend from the Atlantic to the Pacific coast and from Canada to the Gulf of Mexico.

GIBSON REFRIGERATORS TO BE SHOWN IN CHICAGO EXHIBIT

GREENVILLE, Mich.—Gibson electric refrigerators will be exhibited at the Sixth Annual National House Furnishing Exhibit in the Stevens Hotel, Chicago, Jan. 9 to 14, 1933, according to Ed. Jacobs, assistant general manager of the Gibson Electric Refrigerator Corp. here.

TRADE ACCEPTANCES USED BY MANY FIRMS

NEW YORK CITY—Trade acceptances drawn by a seller for goods actually sold and accepted by a responsible buyer, and extending not more than 90 days are "freely circulating credit instruments," and their use is increasing, according to a statement published by the National Electrical Manufacturers Association.

A definite and thoroughly organized country-wide movement is in process to introduce the trade acceptance into American business procedure and to establish it firmly, according to Nema executives.

Summarized, the proposal is to make available for business use in every section of the country and to business of moderate size the congested credit supply now located in metropolitan banks.

Recognized by Banks

Trade acceptances are recognized specifically by the Federal Reserve Board. Federal Reserve banks may purchase them in the open market. They constitute a liquid investment, being rediscountable with the Federal Reserve, thereby extending its ability to participate in the financing of current trade.

Many large banks in the New York district are advocating the practice. These are represented, either by their presidents or chairmen, on the Banking and Industrial Committee of the Second Federal District, which recently issued a statement urging the use of trade acceptances as a substitute for open-book accounts.

The Banking and Industrial Committees of the Third and Fourth Federal Districts have endorsed this proposal as have also the American Acceptance Council, the National Association of Credit Men, the National Industrial Conference Board and, through letter ballot of the Board of Governors, the National Electrical Manufacturers Association.

Accepted Form

The form of the trade acceptance approved by the Federal Reserve banks and tested by the courts is as follows:

In general the trade acceptance will accompany the invoice or, if the basis of payment arranged is for totals purchased in a given period, it will accompany the statement rendered to cover that total.

Upon receipt the buyer has the option of paying the bill less any cash discount allowed, or he may "accept" by filling in the spaces provided on the form and returning the trade acceptance to the seller.

The seller may hold and forward through the banks for collection at maturity, or he may discount with his banker or sell in the open market, thus converting into available live assets the frozen capital, practically unavailable, since tied up in book accounts.

Advantages to Seller

The advantages to the seller may be summarized briefly as follows:

1. Liquid commercial paper is substituted for open-book accounts, the capital of which is tied up until maturity and generally longer.
2. This paper is in acceptable form for discount or sale. It is favored by the Federal Reserve over other types of obligation, and makes the resources of the Federal Reserve available for the proper conservative operations of the responsible merchant or manufacturer however small.
3. The cost of accommodation should be lower than that obtained by direct borrowing.
4. Payment is made in accordance with the terms agreed.
5. There is added incentive to care in extension of credit and added knowledge available for determining credit.

The advantages to the buyer are:

1. Those who settle by trade acceptance will be in practically the same preferred class as those who discount for cash.
2. The need for promptly meeting obligations when due will tend to check overbuying and will induce better collection methods.
3. The established credit standing will enable purchase on the more favorable basis, permitting better competition with cash buyers.
4. The established credit standing will make available the whole field of producers rather than confining him to a comparatively few.

With both seller and buyer lies the advantage that business is done at lower cost, permitting lower prices to the consumer.

The following companies are planning to institute the practice of giving trade acceptances for goods bought, and urging their responsible customers similarly to pay for their purchases:

American Rolling Mill Co., American Smelting & Refining Co., Campbell Soup Co., Chicago & Northwestern Railway, E. I. du Pont de Nemours & Co., Freedom Oil Works, General American Tank Car Corp., General Electric Co., Harbison-Walker Refractory Co., Hubbard & Co., National Steel Corp., Pittsburgh Plate Glass Co.

Standard Oil Co. of New Jersey, The Superheater Co., United Engineering & Foundry Co., United States Rubber Co., Westinghouse Elec. & Mfg. Co.

Use Grocery Boy

KANSAS CITY, Mo.—"Put the grocery boy to work" is the latest electric refrigerator sales formula adopted by the Mace-Ryer Co., here, dealer in Leonard electric refrigerators.

Arrangements were made with numerous city grocery stores which deliver goods to the kitchens of their patrons. Each delivery boy was instructed to observe the type of refrigerators in the home along his route, and to report where electric refrigerators were not in use.

If a Leonard refrigerator sale results from one of these reports, the delivery boy receives a check for $2.00 and the grocery store $1.00.

SUPERVISORS PROMOTED BY ALLEN-INGRAHAM, INC.

NEW YORK CITY—With the recent promotion of Olaf Ostby, Cecil Cannon, Joe Chobot, and Andy Morrow of the Brooklyn branch to sales directorships, there are no longer any supervisors in the organization of Allen-Ingraham, Inc., Westinghouse distributor here.

Greater responsibility and enlarged territories feature the new positions.

G. E. WATER COOLER USED AS 'FOUNTAIN'

CHICAGO—A General Electric water cooler furnished by R. Cooper, Jr., Inc., G. E. distributor, was the "magic fountain" through which flowed "Permutit triple-filtered sparkling table water," when the Woodlawn Laundry Co., on Chicago's south side, introduced this water to the public with an elaborate ceremony on the night of Aug. 8.

The idea for using the General Electric water cooler was conceived by P. A. Hunker, manager of the Cooper water cooler department, according to S. Nides, sales promotion manager of the organization.

On the night of the ceremony, a sound truck outside the Woodlawn Laundry, 1221 East Sixty-Third St., supplied music from 6:30 until 7:50 o'clock, when the Woodlawn Post band and drill team gave an exhibition. Presentation of colors followed, with H. A. Byfield, president of the Woodlawn Business Men's Association, presiding.

Mr. Byfield then introduced the Rev. Lawrence Diether, who delivered the invocation. Alderman John F. Healy made a short talk, after which came an address by the Rev. R. G. Gibson of the United Presbyterian Church.

Col. George "Greeter" Gaw, representing Mayor Cermak, then introduced Miss Delores Wallis of the Publix Balaban & Katz Theaters, who was christened Miss Magic Fountain. After the christening, Miss Wallis broke the contact beam of a photo-electric cell, which started the fountain's operation.

'Diggers' Club'

EVANSVILLE, Ind.—One feature of the "Forty-Niners' Gold Rush" contest which opens Sept. 6 among Servel salesmen will be the organization of a "Diggers' Club" for all salesmen who sell five Servel household refrigerators or commercial machines.

The club will have as its membership emblem a miniature gold shovel, suitable for use as a watch charm.

Credit certificates will be given all salesmen in the contest for every machine they sell. At the conclusion of the campaign, salesmen will forward the certificates to the factory, and will receive in exchange merchandise prizes which they select from a prize catalog sent to them.

HOTEL EDISON PLANS REFRIGERATION SHOW

NEW YORK CITY—The second annual Radio and Refrigeration Show will be held Sept. 19 to 25 at the Hotel Edison here.

The grand ballroom and the mezzanine surrounding it, together with the spacious lobby, will be utilized for exhibition purposes by manufacturers.

More than 400 invitations have been sent to the leading firms, not only in the radio and refrigeration fields, but also to those in allied industries to exhibit their products.

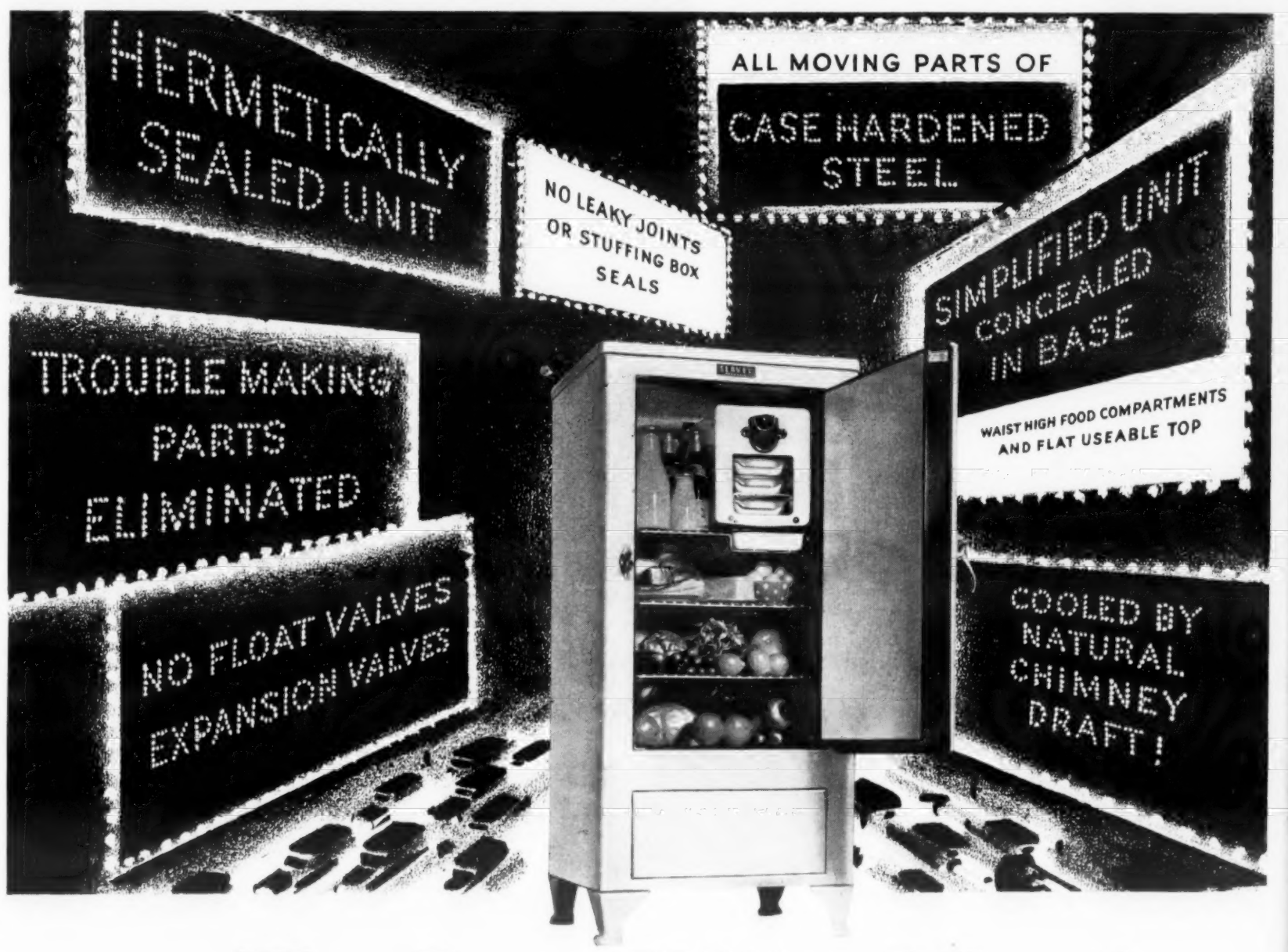
Harry Goldman has been appointed managing director of the exposition.

Each exhibitor will be allotted the same amount of space for the display of his products.

"By this means the small manufacturers will have equal opportunity with the big corporations to interest prospective purchasers in his merchandise," states Goldman.

The room is air conditioned and there is 15,000 sq. ft. of floor space so that there will be ample room for booths and aisles.

The show will be formally opened with a breakfast in the Adams Room.


HERMETICALLY SEALED UNIT
NO LEAKY JOINTS OR STUFFING BOX SEALS
ALL MOVING PARTS OF CASE HARDENED STEEL
SIMPLIFIED UNIT CONCEALED IN BASE
WAIST HIGH FOOD COMPARTMENTS AND FLAT USEABLE TOP
TROUBLE MAKING PARTS ELIMINATED
NO FLOAT VALVES EXPANSION VALVES
COOLED BY NATURAL CHIMNEY DRAFT!

The Great White Way of REFRIGERATOR PROGRESS

Look at these features! *All* electric refrigerators will have them eventually. But today only Servel offers this combination of outstanding and obvious improvements! Its simplified refrigerating unit is an engineering masterpiece, years ahead of any other.

You know what mechanical superiority means—to you as a dealer! You realize that no other electric refrigerator gives you such complete protection from costly kitchen repairs.

Your time and your energy is spent on sales—where it belongs. These clean-cut, practical points give you the strongest selling story—give you a constantly growing number of permanently satisfied customers.

For the next five years, the Servel Hermetic promises you the greatest and surest opportunity in the entire field.

Now is the time to get started. WRITE TODAY for full details of our attractive Dealer Plan.

SERVEL SALES, INC., Evansville, Ind.

SERVEL
HERMETIC
Simplified Refrigeration

WRITE FOR NEW LOW PRICES AND ATTRACTIVE DISCOUNTS

SURVEY OF NEWSPAPER ADVERTISING

LARGE PORTION OF ADVERTISING MONEY USED IN NEWSPAPERS

By Stanley Tobin

THE part that newspaper advertising is playing in the merchandising of electric refrigerators is shown in a survey now being conducted by ELECTRIC REFRIGERATION NEWS. A preliminary report follows.

The electric refrigeration industry today is one of the big users of newspaper space. This survey will present to the industry for the first time a detailed picture of this phase of electric refrigerator merchandising.

Newspapers in key cities of the United States are supplying the data, which is given in agate lines. (There are 14 agate lines in a newspaper column inch.)

The following reports reveal what newspapers are being used by the various manufacturers and their sales outlets, and to what extent. Leading advertisers in the metropolitan centers are shown, as is the amount of advertising they used during 1931 and the first half of this year.

Frigidaire Big Advertiser

Frigidaire is the leading advertiser, according to the reports, to date. General Electric and Kelvinator also are shown as big users of newspaper space.

An interesting observation is that Kelvinator used more newspaper advertising in Omaha during the first half of 1932 than in the entire year of 1931. This company appears to be the leading advertiser in that section. All of the copy was used in one newspaper—the *Omaha World-Herald*.

A number of new advertisers made their appearance during the first half of this year. For instance, in Baltimore, there were 10 automatic refrigerators advertised in 1931. Thirteen manufacturers publicized their wares there during the first six months of this year. In Cleveland, 14 units were exploited during the first part of the year—a gain of four over last year.

The *New York News* and the *Baltimore Post* show the largest gain in refrigerator lineage reported so far. The *Post* carried 51,997 lines during the first six months of 1932 as compared with 46,546 agate lines in all of 1931. The *News* lineage for the first six months of 1932 was 36,186. A total of 30,143 lines was used in this newspaper in 1931. This does not include Sunday editions.

There is much to indicate that manufacturers are departing from the once-common custom in this industry of concentration in one newspaper in a city. Lineage is being distributed among many newspapers in an obvious effort to obtain greater coverage.

New Lineage for Many

Newspapers which, prior to 1931, carried little electric refrigerator advertising, this year are reporting considerable lineage. Refrigerator price reductions undoubtedly are partially responsible for this. Many units now are within reach of the lower income groups, and newspapers which reach these classes are proving profitable media.

The desire to cover a market completely has led manufacturers to schedule newspapers which rank second and third in their communities.

The amount of newspaper advertising used by department stores to sell refrigerators is not included in this survey. Newspapers are unable to furnish statistics, as refrigerator space in most instances is a part of a general advertisement.

Some conception of the extent of automatic refrigerator advertising used by department stores may be gained from the estimate made by four large Detroit stores. Managers reported that about 30,000 lines were used in Detroit newspapers during the first half of 1932.

St. Louis Newspapers

YEAR 1931	POST-DISPATCH	GLOBE-DEMOCRAT	STAR	TIMES
Brandt Electric	183	183	...	...
Brown & Hall	2,485	1,782	...	...
Central States	7,704	8,808	...	...
General Electric	...	54	...	...
Frigidaire	21,669	34,309	13,766	3,372
Grigsby-Grunow	6,486	5,034	...	...
James & Co.	925	...	1,995	...
Kelvinator Corp.	...	10,387	...	...
Koerber Brenner	765	45	...	...
A. R. Lindburg	2,451	...	1,182	600
Norge Co.	8,998	10,800	...	605
E. J. Straus Radio	600	596	198	...
TOTALS	52,266	71,998	17,141	4,577
Local advertising	89,574	96,368	33,924	19,395
GRAND TOTALS	141,840	168,366	51,065	23,972

6 MONTHS OF 1932	POST-DISPATCH	GLOBE-DEMOCRAT	STAR	TIMES
Aeolian Co.	600	1,131	...	...
Artophone Corp.	2,565	1,763	408	...
Brandt Electric	32	...	...	...
Electric Lamp & Supply	1,865	...	204	...
Franklin Furniture Co.	150	150	...	...
Frigidaire	10,517	11,797	5,983	1,428
Grigsby-Grunow	1,470	1,380	...	...
James & Co.	148	96	3,504	...
Kelvinator Sales	1,190	1,185	1,180	...
Koerber Brenner	1,070	...	...	...
A. R. Lindburg	2,958	1,497	81	...
Lindeman Honer	1,114	1,385	650	...
Norge Corp. of Mo.	1,220	861	486	316
Norge Corp.	6,356	6,324	11,172	894
TOTALS	31,255	27,569	23,668	2,638
Local advertising	46,073	49,832	21,340	2,728
GRAND TOTALS	77,328	77,401	45,008	5,366

Detroit Newspapers

YEAR 1931	NEWS	FREE PRESS	TIMES	MIRROR
Apex	1,274	...	...	...
General Electric	16,464	...	7,854	...
Copeland	112	672	...	924
Westinghouse	12,678	8,946	...	...
Majestic	5,460	3,864	3,024	...
Frigidaire	21,602	16,982	12,740	...
Williams Ice-O-Matic	5,334	4,438	3,692	...
Kelvinator	15,484	8,302	1,470	...
Leonard	798	...	...	...
Norge	6,034	4,564	546	...
Belding-Hall	...	504	...	...
Servel	5,040	840	...	...
TOTALS	90,280	49,112	29,326	924

6 MONTHS OF 1932	NEWS	FREE PRESS	TIMES	MIRROR
Copeland	...	1,190	...	...
Majestic†	1,050	...	...	...
General Electric	6,328	...	...	...
Frigidaire	14,924	5,124	5,684	...
Gardner White Co.*	...	...	...	196
Gibson	1,078	756	...	...
Good Housekeeping Shop*	10,486	...	...	...
Grinnell Bros.*	6,300	3,360	2,604	...
Kelly Furniture Co.*	...	...	...	476
Kelvinator	2,380	2,688	...	...
Leonard	784	...	...	...
Lind's*	1,512	714	...	2,044
Mayflower	1,008	...	...	...
Majestic	4,788	...	...	...
Mitchell Outfitting Co.*	70	84	252	532
Norge	5,124	2,492	1,302	...
Reliable	952	...	462	...
Weil & Co.*	...	...	660	...
Westinghouse	350	350	350	...
Wurlitzer*	966	...	1,694	168
TOTALS	58,100	16,758	13,008	3,416

*Handle various makes.
†Utility.

Hartford Newspapers

YEAR 1931	COURANT	TIMES	TOTAL
Copeland	2,564	2,004	4,568
Electric Refrigeration Bureau	8,096	7,616	15,712
Electrolux	2,364	1,420	3,784
Frigidaire	6,955	7,050	14,005
General Electric	23,884	20,575	44,459
G. E. Water Cooler	1,430	1,184	2,614
Kelvinator	10,876	24,025	34,901
Majestic	13,927	10,551	24,478
Norge	1,408	6,321	7,729
Servel	1,692	3,389	5,081
Westinghouse	4,319	7,955	12,274
Williams Ice-O-Matic	506	2,526	3,032
TOTALS	78,021	94,616	172,637

6 MONTHS OF 1932	COURANT	TIMES	TOTAL
Copeland	3,757	1,286	5,043
Frigidaire	7,395	8,266	15,661
General Electric	5,087	6,798	11,885
Gibson	3,307	1,363	4,670
Kelvinator	7,323	6,335	13,658
Majestic	4,696	4,196	8,892
Mayflower	13,235	13,366	26,601
Norge	4,780	2,727	7,507
Westinghouse	...	9,317	9,317
Leonard	5,530	2,800	8,330
TOTALS	55,110	56,454	111,564

Memphis Newspapers

YEAR 1931	COMMERCIAL APPEAL	EVENING APPEAL	PRESS-SCIMITAR
	42,126	24,615	33,536

6 MONTHS OF 1932	COMMERCIAL APPEAL	EVENING APPEAL	PRESS-SCIMITAR
	29,117	26,164	27,140

Kansas City Star

YEAR 1931		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Copeland	Star	...	...	...	56	...	...	420	...	...	...	...	280	756
	Sunday	...	...	114	420	224	...	140	...	...	140	...	...	1,038
Frigidaire	Star	...	...	84	...	...	660	...	...	...	...	420	344	1,508
	Sunday	...	1,260	2,652	2,030	1,750	...	1,260	...	840	1,148	70	504	11,514
General Electric	Star	...	...	728	3,648	2,128	1,932	728	420	...	28	28	596	10,236
	Sunday	...	...	2,464	728	980	...	980	...	...	840	147	504	6,643
Kelvinator	Star	...	...	...	84	...	...	...	...	...	...	...	372	456
	Sunday	...	...	2,142	1,764	2,394	...	4,994	5,090	...	697	...	...	17,081
Majestic	Star	...	...	156	2,779	910	4,649	2,879	3,444	2,034	...	...	1,111	17,962
	Sunday	...	...	742	1,848	1,488	2,540	1,740	1,691	...	672	...	140	10,861
Mayflower	Star	...	...	...	672	...	840	...	...	...	...	...	...	1,512
	Sunday	...	...	...	1,232	532	...	420	...	...	336	...	...	2,520
Norge	Star	...	...	...	...	...	...	...	...	...	364	...	...	364
	Sunday	...	...	546	546	...	...	...	...	...	...	...	...	1,092
Servel	Star	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sunday	...	...	1,692	1,230	1,680	1,258	...	...	1,963	1,240	...	...	9,063
Starr Freeze	Star	...	...	...	...	...	616	...	...	620	...	...	...	1,236
	Sunday	...	...	...	168	378	...	...	...	...	...	...	...	546
Wayne	Star	...	...	...	84	...	...	...	...	...	...	...	...	84
	Sunday	...	...	...	462	...	...	...	...	...	...	...	70	532
Vestinghouse	Star	...	...	...	420	...	...	...	...	...	...	...	472	892
	Sunday	...	...	...	1,200	2,142	...	...	...	...	674	150	150	4,316
Williams Ice-O-Matic	Star	...	...	...	6,099	3,053	3,466	3,127	1,824	465	252	1,225	1,647	21,158
	Sunday	...	...	...	...	...	...	...	...	...	...	...	...	...
Zerozone	Star	...	...	...	84	...	...	...	...	...	...	...	...	84
	Sunday	24	...	...	...	...	...	...	...	...	...	...	...	24
TOTALS	Star	...	...	...	968	13,926	6,091	12,163	7,154	5,688	3,119	644	1,673	4,822	56,248
	Sunday	24	1,260	10,352	11,628	11,568	3,798	9,534	6,781	2,803	5,747	367	1,368	65,230

Cincinnati Newspapers

YEAR 1931	TIMES-STAR	POST	ENQUIRER Morning	ENQUIRER Sunday
Copeland	418	...	1,210	...
Electrolux	1,060	414	...	...
Frigidaire	26,492	3,484	3,062	2,986
General Electric	10,416	2,930	7,646	11,605
Kelvinator	11,110	4,572	1,240	216
Leonard	...	...	1,232	...
Majestic	6,780	3,762	1,661	3,312
Mohawk	1,119	...	1,240	...
Norge	3,875	2,076	1,210	2,402
Servel	8,980	...	2,764	...
Wayne	2,938	1,684	1,240	760
Westinghouse	11,341	...	1,464	5,824
Williams Ice-O-Matic	398	...	...	252
Zerozone	...	...	1,245	...
TOTALS	84,927	18,922	25,214	27,357

6 MONTHS OF 1932	TIMES-STAR	POST	ENQUIRER Morning	ENQUIRER Sunday
Apex	600	...	...	...
Buckeye	...	...	...	102
Copeland	1,872	1,220	...	...
Crosley	952	...	...	...
Electrolux	968	...	...	...
Frigidaire	12,960	2,463	878	...
General Electric	3,741	...	728	804
Gibson	1,486	...	...	...
Kelvinator	5,272	1,924	...	...
Leonard	4,120	...	...	...
Majestic	1,190	...	...	1,488
Mohawk	590	...	...	...
Norge	7,541	1,983	...	1,248
Servel	4,258	...	...	...
Sparton	620	...	...	...
Starr Freeze	636	...	...	...
Stewart-Warner	652	...	...	...
Tricold	3,805	...	...	...
Westinghouse	4,848	...	...	2,529
Zerozone	459	...	837	...
TOTALS	56,570	7,590	2,443	6,171

Cleveland Newspapers

YEAR 1931	PRESS	PLAIN DEALER Daily	PLAIN DEALER Sunday	NEWS Daily	NEWS Sunday
Apex	1,890	...	6,574	...	...
Electrolux	6,542	6,376	...	...	...
Frigidaire	16,618	17,948	...	17,053	...
General Electric	3,064	26,356	2,400	3,319	776
Kelvinator	4,686	9,965	...	1,352	...
Majestic	4,584	...	4,491	4,719	...
Mayflower	...	416	...	886	...
Norge	4,598	...	4,479	1,128	...
Servel	...	2,523	1,240	...	...
Westinghouse	...	10,058	...	2,403	...
TOTALS	41,982	73,642	19,184	30,860	776

6 MONTHS OF 1932	PRESS	PLAIN DEALER Daily	PLAIN DEALER Sunday	NEWS Daily	NEWS Sunday
Apex	490	...	...	...	...
Bohn	336	...	...	...	...
Copeland	705	695	...	429	346
Electrolux	...	2,400	...	...	...
Frigidaire	6,947	6,756	255	8,558	231
General Electric	2,676	10,442	...	280	...
Gibson	877	844	...	...	...
Kelvinator	...	...	...	5,480	700
Leonard	621	...	1,141	660	...
Majestic	1,500	2,898	...	...	...
Mayflower	...	103	...	1,431	...
Norge	5,601	...	3,007	...	...
Starr Freeze	76	...	...	74	...
Westinghouse	...	5,260	...	...	580
TOTALS	19,829	29,398	4,403	16,912	1,857

Minneapolis Newspapers

YEAR 1931	JOURNAL	TRIBUNE
Apex	...	2,702
Bohn	9,952	3,810
Crane	180	150
Frigidaire	33,516	14,233
General Electric	18,726	2,212
Kelvinator	16,999	7,026
Majestic	5,738	4,884
Norge	7,624	7,514
Servel	4,766	2,640
Westinghouse	2,463	900
Williams Ice-O-Matic	...	2,738
TOTALS	99,964	48,809

6 MONTHS OF 1932	JOURNAL	TRIBUNE	STAR
Bohn	7,522	6,503	3,165
Copeland	3,138	...	...
Crane	168	...	...
Frigidaire	10,890	7,455	...
Kelvinator	...	4,814	...
Majestic	2,646	4,652	2,006
Mohawk	1,344	...	...
Norge	9,136	9,445	3,882
Kelvinator*	5,364	5,380	5,352
Refrigerator Sales	112	56	...
Rose & Martin	900	1,456	...
Servel	2,532	840	...
Stuefer O F	10,228	28	...
TOTALS	53,980	40,629	14,405

*Placed by Northern States Power Co.

Kansas City Newspapers

6 MONTHS OF 1932	STAR Daily	TIMES	STAR Sunday	JOURNAL-POST Daily	JOURNAL-POST Sunday
Apex	...	...	42	...	...
Buckeye	4,664	...	1,624	...	...
Copeland	1,060	140	882	...	...
Electrolux	...	...	672	...	...
Frigidaire	7,715	6,650	8,085	5,762	1,080
General Electric	9,426	9,426	1,805	...	...
Gibson	420	420	378	...	...
Grinnell	1,170	955	...	...	...
Williams Ice-O-Matic	4,961	4,354	...	...	...
Kelvinator	2,589	2,454	1,648	...	...
Leonard	5,529	...	672	...	...
Majestic	9,670	8,119	3,843	...	...
Mayflower	3,112	1,512	920	...	1,383
Mohawk	180	...	...	...	...
Norge	6,895	3,579	4,739	...	...
Polar Star	1,510	...	458	...	...
Servel	224	224	660	...	...
Spartan	525	252	980	...	...
Westinghouse	851	746	310	...	...
Zerozone	90	...	2,505	...	...
TOTALS	60,581	38,831	30,223	5,762	2,463

Chicago Newspapers

YEAR 1931	TRIBUNE Daily	TRIBUNE Sunday	HERALD EXAMINER Daily	HERALD EXAMINER Sunday	NEWS	AMERICAN	POST	TIMES
	81,944	78,587	22,338	2,398	57,125	14,735	...	56

6 MONTHS OF 1932	TRIBUNE Daily	TRIBUNE Sunday	HERALD EXAMINER Daily	HERALD EXAMINER Sunday	NEWS	AMERICAN	POST	TIMES
	67,669	12,503	18,691	5,712	53,854	12,817	...	160

(CONCLUDED ON PAGE 10, COLUMN 2)

Refrigeration Advertising and Sales Promotion News

FRIGIDAIRE OFFERS 7 DIRECT-MAIL PIECES

DAYTON—Seven new pieces of literature are being offered dealers and distributors by the sales promotion department of Frigidaire Corp. The material is for use as direct-mail pieces or handouts.

One of the pieces is a 32-page booklet, printed in full color, devoted to a presentation of all Frigidaire household models, with a general discussion of all Frigidaire features.

The second is a 16-page booklet in three colors, outlining the nature and adaptability of Frigidaire equipment for flower stores. It contains discussions and pictures of the equipment, together with numerous testimonial letters and illustrations of Frigidaire-cooled cases in several floral establishments throughout the country.

Water-Cooling Pieces

Two of the pieces are devoted to Frigidaire water-cooling equipment. The first outlines and pictures the various models of water coolers available for domestic, office, or store use. The second is a presentation of Frigidaire's three new high-capacity water coolers for use where there are large capacity unit requirements or for multiple installations.

One piece is a broadside for distribution among restaurant, grocery store, food shop, hotel, meat shop, and delicatessen owners, and presents in text and pictures the features of Frigidaire commercial equipment.

Another is a broadside for promoting sales of display-case cooling equipment, and presents in a number of small, three-color sketches, various features of Frigidaire equipment. The remainder of the piece is given over to testimonial letters from merchants, with photographs of their stores.

The last is a small folder discussing the "two-cylinder" feature of Frigidaire compressors, and is suitable for distribution among prospects of all classifications.

HAWAIIAN CONCERN USES JAPANESE, CHINESE ADS

HONOLULU, Hawaii—Japanese, Chinese and English newspapers are used by W. A. Ramsay, Ltd., Hawaiian distributor of General Electric refrigerators, for advertising the product among the island's inhabitants. The Ramsay concern employs Japanese, Chinese and American salesmen.

Advertisements published recently in Chinese papers emphasized the fact that Chinese prospects may hear the story of the G. E. unit told by one of their own race—Andrew Ho.

Similar matter was used to introduce M. Kumaishi, Japanese salesman, to prospects of that nationality. Said the ad, "He will be glad to have Japanese call upon him and he will explain to them in their own language the benefits of the refrigerator."

GIBSON DEALERS ENTER FLOAT IN COUNTY FAIR

MONTICELLO, N. Y.—Gordon & Daily Auto Sales here, and J. W. Albee and Sons of Roscoe, N. Y., Gibson electric refrigerator dealers, recently advertised the Gibson by means of a large motor-drawn float which they put into competition at the Sullivan County fair.

The float was entirely covered by foliage, and atop its flat surface was a single Gibson electric refrigerator, shown against a modernistic screen which concealed the cab of the truck. The word "Gibson" was emblazoned in large letters across the sides of the float.

SERVEL ISSUES MAILING PIECE ON COOLING UNITS

EVANSVILLE, Ind.—Air conditioning for business establishments and homes is the subject of a cool green mailing piece being distributed by Servel Sales, Inc., among home and business owners in some territories.

A brief discussion of the merits of air conditioning, a colored photograph of a cabinet type cooling unit, and a number of pictures of installations make up most of the folder.

'LEN-A-DOER' ISSUED WEEKLY TO DEALERS

DETROIT—The Leonard Refrigerator Co. here is now issuing a weekly mimeographed bulletin, The Len-a-doer, containing news of events in the Leonard organization, sales hints, and discussions of sales problems. Copies of the bulletin are sent to all distributors, dealers and salesmen of Leonard electric refrigerators.

ADVERTISING BY ELECTRIC REFRIGERATOR MANUFACTURERS IN AUGUST NATIONAL MAGAZINES

Frigidaire
Collier's (Aug. 27) ..... 1 page

General Electric
Good Housekeeping (Aug.) ..... 1 page

Norge
Good Housekeeping (Aug.) ..... 1 page

Westinghouse
Saturday Evening Post (Aug. 13) ..... 1 page

SEEGER USES COLOR IN TWO MAIL BROADSIDES

ST. PAUL, Minn.—Two colored broadsides, one for distribution among delicatessen owners, and the other for meat market owners, are now being circulated by the sales promotion department of the Seeger Refrigerator Co.

Both pieces picture several Seeger cases in color against a black background, give a complete table of specifications of cases designed for installation in delicatessens and butcher shops, illustrate new methods of arranging trays in display cases, and present diagrams which show the construction of Seeger cases.

LEONARD ADVERTISING MAN AWARDED SLOGAN PRIZE

DETROIT—John M. Bonbright of Brooke, Smith & French, Inc., advertising agency for the Kelvinator Corp. and the Leonard Refrigerator Co., has been adjudged winner of a national advertising contest sponsored by John Wanamaker, New York City, who sought the best slogan descriptive of a newly patented construction now used in Silver King golf balls.

The prize is a trip to Europe for two persons. Bonbright and his wife will sail Aug. 27 on the *Ile de France*.

The winning slogan was:

"Its core adds distance when you whack it
Because the patent inner jacket
Imparts live power where others lack it."

METAL EDGE BOX CATALOG FEATURES IMPROVEMENTS

PHILADELPHIA—Announcing several improvements in the metal-edge method of packaging, a new 24-page booklet is being sent to users of paper boxes by the National Metal Edge Box Co.

The improvements listed are a new deep-pronged stay, designed not to tear away from the board; a new super-fibre box board; new colors in both the board and stay; multi-color printing of flats; a "package engineering" service to study and simplify the user's packaging requirements; a design service for advertising a product on every package; and improved equipment for making boxes from flats.

The booklet is profusely illustrated. It pictures the various uses for paper boxes, some of the tests which have been applied to metal-edge boxes, the stayer in operation, the colors in which the metal stay and board are obtainable, and testimonial letters received by the manufacturer.

TAGLIABUE PROMOTES SALE OF RECORDERS BY MAIL

BROOKLYN—The C. J. Tagliabue Co. is now conducting a direct-mail campaign to secure and promote orders for its new Tag miniature-size recording thermometer, and the Tag square-case dial-indicating thermometer.

Full descriptions of the two devices are offered in the four-page folder, directions are given for a typical application of the mechanisms, and a table of prices is printed. With the folder is enclosed a postal card for ordering the devices singly or in quantities.

'KELVINATOR COOKERY' GIVES COLD DRINK RECIPES

DETROIT—Marion F. Sawyer, Kelvinator Corp.'s home economist, devotes her attention to appetizing foods for hot weather serving in the August issue of Kelvinator Cookery. Desserts, drinks, and salads are given the greater amount of space in the monthly publication, which is sent to Kelvinator users and prospects.

ADVERTISING FACTOR IN COPELAND DRIVE

DETROIT—An intensive advertising program forms an integral part of the electric refrigerator sales campaign being conducted throughout the state of Michigan by the Copeland Refrigeration Co. of Detroit.

Newspaper advertising, new window displays, and cooking schools are being employed by many Copeland dealers in Michigan, while in the Detroit area, painted bill boards and road signs have been placed on the principal roads leading into the city. Radio advertising is in use to some extent.

A feature of the campaign is the use of a man who impersonates a robot, and is shown in dealers' windows and showrooms throughout the state.

In some instances, the man has been shown on the stages of theaters in localities where Copeland refrigeration is sold.

AIR CONDITIONING FEATURED BY NEWSPAPER

PHILADELPHIA—Air conditioning was featured on a page in the *Philadelphia Public Ledger* recently.

The page carried advertisements by Frigidaire Corp., Carrier Engineering Corp., and Philadelphia Electric Co.

A story by Victor Henderson told how air conditioning is achieving a place as a trade leader, and discussed the general theory of air conditioning. Two other stories described the Frigidaire and Carrier equipment in detail.

NO NEWSPAPER SO DEALER USES HANDBILLS

FRANKLIN SQUARE, L. I.—Since there is no local newspaper in this little city, Charles F. Bedell, Leonard electric refrigerator dealer here, has made wide use of handbills to advertise household refrigeration, and has found them very effective.

The handbills are made from mats supplied to dealers and distributors by the manufacturer. They are superior to any bills which the dealer might prepare himself, says Bedell, because they are the work of experienced copy-writers and layout men.

TWO CHICAGO CONCERNS FEATURE DISPLAY MATTER

CHICAGO—Many electric refrigerator dealers and distributors throughout the country are receiving circulars from two manufacturers of window-display equipment.

The Celotex Service Bureau is using the August issue of its publication, *Eye-Catching Ideas*, to discuss and illustrate the various uses of C-X wallboard and Celotex window blocks in making window displays. The folder gives dimensions and suggested patterns for window layouts.

Poster Products, Inc., is issuing a single mimeographed page urging merchandisers to make greater use of die-cut felt letters in window displays.

SERVEL COMMERCIAL OFFERS MAIL PIECES

EVANSVILLE, Ind.—Dramatizing the "spoilage phantom," materials for a new direct-mail campaign planned for grocery stores, food shops, meat markets, restaurants, kitchens, lunch rooms and hotels are being offered to Servel commercial refrigeration dealers by the sales promotion department here.

The campaign is divided into two parts, each of which is a campaign within itself. The details and illustrations of Campaign A have been prepared especially to attract food retailers, while Campaign B is designed to reach those who prepare and serve food in restaurants.

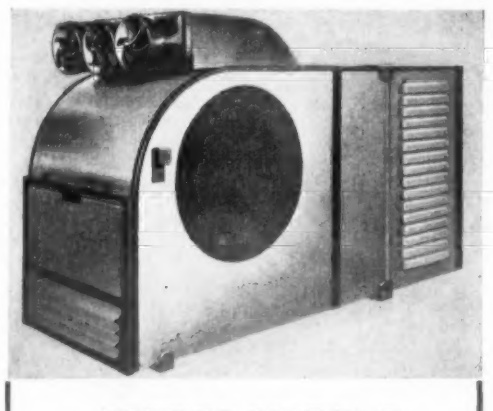
"Like a thief in the night" is the message conveyed by the first mailing piece, which emphasizes the dangers of food spoilage. The second piece bases its appeal on this statement: "Satisfied customers are the basis of your success." Mailing piece No. 3 points out the protection, convenience, and economy afforded by electric refrigeration.

GIBSON DISTRIBUTOR USES TRUCK ADVERTISING

KANSAS CITY, Mo.—A fleet of automobile trucks carry Gibson advertising for the Townley Metal and Hardware Co., distributor of Gibson electric refrigerators here. Large Gibson signs are attached to the sides of each truck.

These trucks deliver in Greater Kansas City for the Townley company, and also transport merchandise between the Townley warehouses and the various freight and truck depots.

Inexpensive
SUMMER COOLING
for customers . . . increased
SUMMER SALES
for you ~



WITH the blazing summer sun now making shopping a hot, uncomfortable task, the store that can offer customers a cool, comfortable shopping place will get the lion's share of summer business. People will come oftener, stay longer and buy more.

With Airtrol, the complete air conditioning equipment, you can offer any store or business building in your locality this profitable summer cooling at a price that even the smallest shop can pay. When installed with a specially designed water cooler and any commercial refrigerating unit of proper capacity, Airtrol will cool and de-humidify the air to a point well within the comfort zone.

When you sell Airtrol summer cooling, you are also selling all year 'round comfort. For in winter and summer Airtrol supplies fresh, cleaned air, freely circulated, comfortably heated or cooled, and correctly humidified or de-humidified.

It is small, compact, largely self-contained and can be installed quickly, easily and inexpensively. Its lower price, made possible by new features of design and construction, gives you an excellent margin of profit.

There is no longer any doubt that air conditioning offers you the greatest opportunity for profit of any business developed within the last ten years. Take advantage of this great and growing market. Write today for full details of Airtrol and of the complete Airtrol selling plan that has been created to help you sell more Airtrols, more quickly and more profitably. J. H. McCormick & Co. Works: Williamsport, Pa. General Sales Office: Chrysler Bldg., at 42nd St. and Lexington Ave., New York. Canadian Sales Representative: A. H. Simpson, 45 Yonge St., Toronto, Canada.

AIRTROL MODEL B
CABINET TYPE

Airtrols, ranging in capacity from 18,000 cubic feet to 125,000 cubic feet, are available to suit every need from private homes to the large industrial plant; for retail stores and business places of almost any size or type; restaurants, auditoriums, schools—any place where people gather; beauty parlors and barber shops; offices, homes—in kitchens and other rooms. Where the capacity of a single Airtrol cabinet is insufficient, a battery of two or more Airtrols may be used to circulate the necessary amount of pure air, heated or cooled and correctly humidified or de-humidified.

AIRTROL

PROMOTION PLANNED BY COOKING COUNCIL

NEW YORK CITY—"Full Speed Ahead" was the motto adopted by the National Electric Cookery Council at the meeting of its executive committee here recently. Preston S. Arkwright was chairman of the committee which was made up of manufacturers and utility executives.

The plan adopted by the committee provides for intensive sales promotion through the use of field representatives, a headquarters staff, a field plan book, and numerous aids for the use of local electric cookery councils to be organized throughout the United States.

The various aids provided for local electric cookery councils include as a major item a newspaper mat service.

The plan book will be a guide to all local electrical interests. Its text and suggestions will aid in the immediate formation of local cookery councils.

Following this organization work the executive committee plans to launch a national consumer advertising campaign.

The following divisional directors have been appointed to promote electric cookery in their respective territories: New England division, W. C. Bell, vice president of New England Power Association, Boston; Eastern division, A. H. Schoelkopf, executive vice president, Niagara Hudson Power Corp., Buffalo.

Southeastern division, C. A. Collier, vice president, Georgia Power Co., Atlanta; East Central division, T. O. Kennedy, vice president of Ohio Public Service Co., Cleveland; North Central division, H. E. Young, vice president, Northern States Power Co., Minneapolis; Great Lakes division, G. W. VanDerzee, vice president and general manager of the Milwaukee Electric Railway and Light Co., Milwaukee; Northwest division, M. L. Hibbard, vice president and general manager of Idaho Power Co., Boise, Idaho.

Southwestern division, P. E. McChesney, vice president of the Gulf States Utilities, Beaumont, Tex.; Pacific Coast division, W. L. Frost, vice president, Southern California Edison Co., Los Angeles; Rocky Mountain division, W. N. Clark, vice president of the Southern Colorado Power Co., Pueblo, Colo.

KELVINATOR INSTALLED IN GOLD MINING REGION

WINNIPEG, Man.—Traveling by airplane, Jimmie Lightheart, installation man for Electrical Supplies, distributor for Kelvinator of Canada, Ltd., recently took Kelvinator refrigeration to Red Lake, Ont., isolated gold-mining settlement.

Lightheart reported the trip and installation as follows:

"I have just returned from Red Lake, Ont., 125 miles north of Sioux Lookout, where I installed a Kelvinator model D-11 and two SP-100 coils in a walk-in box for the Red Lake meat market. This is the first electric refrigeration for that district.

"Red Lake is a thriving settlement on the Howey Gold Mine property, with a population of 300. Electricity is supplied by the mine. There is a general store, butcher and bakery shop, a pool room, barber shop, post office, restaurant, sawmill, and a school attended by 34 children.

"During the spring break-up and fall freeze-up, when there is neither ice nor navigation, the town is isolated from the outside world except for radio. Thus the necessity for stocking up on supplies to last over a period of several weeks. Viewed from the air this part of Ontario looks like a vast lake dotted with islands covered with small trees. The only means of passenger travel is by air. I took the Kelvinator equipment with me in the plane.

"We were forced down by a storm and spent a night in a log house, but this was merely an adventure.

"Before I left, the butcher shop had stocked up to last for several weeks. They had put in 16 quarters of beef, one carcass each of veal and lamb, 14 cases of butter, 5 tubs of pork, 4 cases of bacon and 6 of boneless meat. All this was hauled in from the railroad on sleighs behind caterpillar tractors.

The winter freight rate by tractor is 7½ cents a pound, by air 19½ cents a pound. Commodities at Red Lake are priced accordingly. Potatoes sell for $10 a bag, and gasoline is a dollar a gallon. They use liquor up there too, and it comes high."

COPELAND SALES MANAGER TOURS MIDDLE WEST

MT. CLEMENS, Mich.—Charles W. Hadden, general sales manager for Copeland Products, Inc., is making an extended tour in the Middle West, calling on Copeland distributors and dealers. Mr. Hadden's itinerary includes Chicago, Milwaukee, Minneapolis, Cedar Rapids, Iowa; Des Moines, Iowa; Rock Island, Ill.; St. Louis and Indianapolis. He will spend from one day to a week at the various points.

Des Moines Dealers Sponsor Show

DES MOINES, Iowa—The first electric refrigeration show to be held in this city was sponsored by the Refrigeration Bureau here, from July 20 to July 22. It will be an annual affair.

Eleven distributors participated and 55 electric refrigerators were on display in the Herring building, Tenth and Mulberry St.

Miss Freda Carpenter, home economist of the Des Moines Electric Light Co., spoke on "The Electric Refrigerator as a Time and Energy Saver."

Miss Josephine Wylie, associate editor of *Better Homes & Gardens*, described recipes submitted in a recent contest conducted by her publication.

The Stewart-Warner exhibit was under the direction of Mort Zucker, manager of the Stewart-Warner Distributing Co., 1412 Locust St.

OIL-O-MATIC DEALERS MEET AT FACTORY

BLOOMINGTON, Ill.—More than 200 Williams Oil-O-Matic dealers and sales representatives attended a one-day sales meeting at the Williams factory here recently.

Announcement was made of an intensive advertising campaign through key city newspapers to be launched Aug. 15. This will be backed up by tie-in advertisements run by Oil-O-Matic dealers in their own communities.

R. D. Marshall acted as chairman of the meeting, and C. U. Williams, president of Williams Oil-O-Matic Heating Corp., welcomed the delegates. Earl Ross, acting sales manager, Earl S. Smith, sales engineer, and D. M. Frank, advertising manager, were other speakers.

DEPARTMENT STORE SALES TOUCH NEW LOW IN JULY

WASHINGTON, D. C.—The value of department store sales during July touched a new low for the past 13 years, dropping below the June level and continuing the downward trend of recent months, Federal Reserve Board statistics reveal.

Measured by the board's index number, which is based on 1923-25 averages as 100, the value of sales by 517 reporting stores in 133 cities were lower than in any month since May, 1919.

The index number stood at 69 in July, the same point at which it was in May, 1919; the only point at which it has been lower was in January, 1919, when it was 66, the figures show.

The index dropped from 73 in May to 71 in June and then fell another two points in July, which averaged 30 per cent lower than same month last year.

Value of sales between January and the end of July averaged 24 per cent lower than last year.

185 RANGES INSTALLED IN APARTMENT HOTEL

CHICAGO—Installation of 185 General Electric Hotpoint ranges has just been made in the Seneca apartment hotel here by R. Cooper, Jr., Inc., G. E. distributor in Chicago. Fred Ramsdell, manager of the Cooper range department, made the sale.

Several makes of electric ranges were tested by a selected group of Seneca tenants before the Hotpoints were chosen, according to S. Nides, sales promotion manager of the Cooper organization. According to Manager Walsh of the apartment hotel, the tests indicated that the Hotpoint consumed less current than the other ranges tested.

Commercial Men Must Know Merchandising

MT. CLEMENS, Mich.—That the successful salesman of commercial refrigeration must not only be an expert in the mechanics of electric refrigeration, but a merchandising counselor to the merchant whom he is selling, is the opinion of W. D. McElhinny, vice president in charge of sales, Copeland Products, Inc.

"He must know how to determine whether refrigeration with display should be recommended, and if so the particular type to meet the specific requirements of that individual merchant. The degree of temperature that each particular kind of food product requires must also be known by the salesman," McElhinny believes.

"The commercial refrigeration salesman should be able to act as counselor to the merchant, telling him the best methods of presenting as well as preserving his merchandise so as to appeal most forcefully and attractively to the buyer."

KELVINATOR EQUIPMENT PLACED IN MARKET

BATH, Me.—George R. Perry, store manager of the Central Maine Power Co.'s office here, reports a recent installation of Kelvinator refrigeration equipment in L. E. Steeve's Market.

The equipment installed was: a model 107 McCray display counter with a X5-50 cooling unit; a model 127 McCray display counter with two X5-30 cooling units; a walk-in box with two X5-140 cooling units operated by a model R-30-5527 Kelvinator unit. The two display counters were operated by a model F-30-5535 Kelvinator unit.

23 COMMERCIAL GROUPS GIVE SALES INFORMATION

WASHINGTON, D. C.—Twenty-three commercial groups in eight Midwestern states have installed, with the cooperation of the Department of Commerce, a special merchandising information service designed to give manufacturers and merchants in their communities the benefit of the newest research and nation-wide practical experience in the distribution field, according to a Department of Commerce statement.

Services have now been set up by 160 commercial organizations in 26 states with the cooperation of the department.

These 23 Midwest business organizations which are cooperating to make more generally available the marketing information supplied by the department are as follows:

Chamber of Commerce, Quincy, Ill.; National Retail Hardware Association, Indianapolis; Chamber of Commerce, Fort Wayne, Ind.; Chamber of Commerce, Columbus, Ind.; Indiana Farmers' Guide, Huntington, Ind.; Montgomery County Chamber of Commerce, Crawfordsville, Ind.; Chamber of Commerce, New Albany, Ind.

Chamber of Commerce, Kansas City, Kan.; Chamber of Commerce, Covington, Ky.; Chamber of Commerce, Richmond, Ky.; Commercial & Civic Association, Newport, Ky.; Chamber of Commerce, Corbin, Ky.

Chambers of Commerce in Battle Creek, Mich., Flint, Mich., Jackson, Mich., Owosso, Mich., Saginaw, Mich.; Merchants' Association, Inc., Lansing, Mich.; Greater Muskegon Chamber of Commerce, Muskegon, Mich.

Chamber of Commerce, Duluth, Minn.; Chamber of Commerce, Dayton and Columbus, Ohio; and Chamber of Commerce, Tulsa, Okla.

SURVEY OF NEWSPAPER ADVERTISING

(CONCLUDED FROM PAGE 8)

Atlanta Newspapers

YEAR 1931	JOURNAL	CONSTITUTION	GEORGIAN & AMERICAN
Frigidaire	23,671	21,742	12,431
General Electric	49,206	39,938	34,114
Kelvinator	5,474	18,202	2,779
Norge	4,480	5,030	1,701
Mayflower	1,844	504	...
Majestic	16,133	6,742	28
Westinghouse	4,123	3,524	598
Copeland	1,673	679	112
Servel	15,898	...	...
Universal	210	714	...
Cold Spot	2,065	3,045	...
Leonard	238	280	...
TOTALS	125,015	100,400	51,763

6 MONTHS OF 1932	JOURNAL	CONSTITUTION	GEORGIAN & AMERICAN
Frigidaire	7,049	11,472	5,138
General Electric	17,521	12,642	12,953
Norge	9,793	7,641	4,817
Majestic	20,263	23,865	8,375
Buckeye	1,190	...	...
Gibson	4,389	3,958	378
Lipman	420	420	...
Westinghouse	4,459	1,225	1,400
Kelvinator	24,744	714	210
Leonard	8,522	4,735	238
Mayflower	2,173	861	903
Mohawk	2,649	4,627	1,869
Copeland	...	...	56
Servel	1,204	...	...
Universal	721	...	378
Cold Spot	2,016	2,121	798
TOTALS	107,113	74,281	218,907

Omaha Newspapers

YEAR 1931	WORLD-HERALD	BEE-NEWS	TOTAL
Frigidaire	20,055	21,875	41,930
General Electric	882	861	1,743
Kelvinator	11,998	1,750	13,748
Majestic	6,804	6,048	12,852
Mohawk	1,225	1,645	2,870
Norge	4,844	6,461	11,305
Servel	11,361	840	12,201
Westinghouse	1,176	294	1,470
Williams Ice-O-Matic	6,419	...	6,419
Omaha Electric Refrigeration Bureau	5,418	5,446	10,864
General Refrigeration Co.	280	1,540	1,820
TOTALS	70,462	46,760	117,222

6 MONTHS OF 1932	WORLD-HERALD	BEE-NEWS	TOTAL
Frigidaire	1,092	1,092	2,184
Kelvinator	14,602	...	14,602
Majestic	2,719	...	2,719
Norge	4,312	2,247	6,559
Westinghouse	1,470	1,470	2,940
Omaha Electric Refrigeration Bureau	4,368	3,640	8,008
Storz Refrigeration Co.	5,460	8,652	14,112
TOTALS	34,023	17,101	51,124

Indianapolis Newspapers

YEAR 1931	NEWS	STAR Daily	STAR Sunday	TIMES
Frigidaire	24,516	284	20,692	...
General Electric	21,308	...	4,863	...
Kelvinator	12,485	3,180	1,303	...
Leonard	...	5,998	...	...
Majestic	5,589	879	2,526	3,018
Norge	13,368	...	704	540
Servel	7,203	4,639	...	...
Starr Freeze	648	...	...	...
Westinghouse	2,643	896	1,220	...
Williams Ice-O-Matic	6,445	...	...	...
TOTALS	94,205	15,876	31,308	3,558

6 MONTHS OF 1932	NEWS	STAR Daily	STAR Sunday	TIMES
Buckeye	...	...	1,388	...
Crosley	1,115	...	...	...
Frigidaire	8,027	4,348	1,973	...
General Electric	4,962	...	2,872	...
Kelvinator	5,198	5,193	2,320	...
Leonard	1,788	...	302	...
Majestic	1,215	...	304	780
Mohawk	1,285	...	...	...
Norge	6,003	...	3,958	423
Stewart-Warner	648	...	...	...
Westinghouse	...	1,278	...	...
TOTALS	30,241	10,819	13,117	1,203

Baltimore Newspapers

YEAR 1931	SUN	AMERICAN	NEWS	POST
Copeland	999	...	780	2,280
Frigidaire	25,925	...	...	25,424
General Electric	13,239	...	...	...
Williams Ice-O-Matic	...	796	...	2,284
Kelvinator	21,135	11,971	11,729	11,028
Majestic	7,424	50	3,762	4,780
Mayflower	...	...	348	750
Norge	1,336	...	4,304	...
Servel	12,212	...	...	...
Westinghouse	8,348	...	1,190	...
TOTALS	90,618	12,817	22,113	46,546

6 MONTHS OF 1932	SUN	S. AMERICAN	NEWS	POST
Crosley	...	...	...	250
Frigidaire	10,354	210	9,196	16,367
General Electric	12,650	...	...	...
Gibson	2,365	...	...	2,400
Williams Ice-O-Matic	...	...	...	1,112
Kelvinator*	10,947	5,861	6,174	15,386
Leonard	...	...	...	1,668
Majestic	1,275	1,580	3,035	6,925
Mohawk	...	...	...	3,312
Norge	4,060	...	...	...
Servel	...	...	...	3,348
Thermo Engineering	3,966	...	...	...
Westinghouse	4,774	...	...	1,229
TOTALS	50,391	7,651	18,405	51,997

*Placed by Gas & Elec. Co.

San Francisco Newspapers

YEAR 1931	EXAMINER Morning	EXAMINER Sunday	CHRONICLE Morning	CHRONICLE Sunday	CALL BULLETIN	NEWS
Frigidaire	16 929	...	...	...	16,333	...
General Electric	336	...	...	...	...	...
Holbrook	1,704	...	...	...	4,048	...
Kelvinator	3,515	...	...	...	...	...
Majestic	1,011	1,944	2,526	...	3,033	2,019
Norge	3,412	...	...	591	4,008	1,098
Servel	7,173	...	848	...	...	...
TOTALS	34,080	1,944	3,374	591	27,422	3,117

6 MONTHS OF 1932	EXAMINER Morning	EXAMINER Sunday	CHRONICLE Morning	CHRONICLE Sunday	CALL BULLETIN	NEWS
Buckeye	1,008	...	...	...	...	...
Frigidaire	12,037	639	1,260	...	14,119	...
Leonard	...	5,712	...	...	...	...
Majestic	...	3,740	...	...	...	...
Norge	2,240	...	...	...	2,676	1,653
North California Refrigeration Bureau	438	...	...	...	459	...
TOTALS	15,723	10,091	1,260	...	17,254	1,653

New York Newspapers

	YEAR 1931 DAILY	YEAR 1931 SUNDAY	6 MONTHS OF 1932 DAILY	6 MONTHS OF 1932 SUNDAY
Journal	114,546	...	74,216	...
Sun	176,528	...	56,375	...
World-Telegram	116,915	...	79,503	...
Post	94,980	...	23,256	...
Times	96,541	15,528	50,798	8,662
Herald-Tribune	102,494	33,890	23,181	7,677
American	19,638	...	11,335	9,688
News	30,143	1,572	36,186	6,840
Mirror	12,485	...	4,200	...
TOTALS	764,270	50,990	359,050	32,867

Philadelphia Newspapers

YEAR 1931 BULLETIN	LEDGERS	INQUIRER	RECORD
230,214	74,906	63,775	21,897

6 MONTHS OF 1932 BULLETIN	LEDGERS	INQUIRER	RECORD
87,156	37,894	49,494	26,339

Pittsburgh Newspapers

YEAR 1931 PRESS	SUN-TELEGRAPH	POST-GAZETTE	TOTAL
96,280	79,813	52,074	228,167

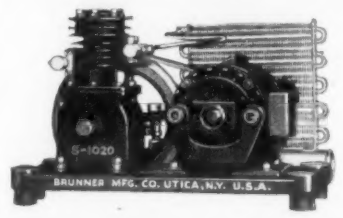
6 MONTHS OF 1932 PRESS	SUN-TELEGRAPH	POST-GAZETTE	TOTAL
60,412	34,584	23,914	118,910

BUYER'S GUIDE

Manufacturers Specializing in Service to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space. Payment is required monthly in advance to obtain this special low rate. Minimum Contract for this column—13 insertions in consecutive issues. All advertisements set in uniform style of type with standard border. Halftone engravings of 100-line screen, either outline or square finish. No reverse cuts or heavy black effects. No charge for composition.

PROVEN BUSINESS BUILDERS



26 years of experience stand behind Brunner's ability to build a quality product on a price basis that helps you get the business. Get the complete Brunner story. Refrigeration Division, Brunner Manufacturing Co., Utica, N. Y.

HIGH SIDES and COMPRESSORS by BRUNNER

BARE COMPRESSORS

New 1/6 H. P. Twin 1¼" x 1¼"

For Sulphur Dioxide or Methyl Chloride

Other Sizes 1/6 H. P. to 50 H. P.

H. C. PARKER, LTD.

2627 Santa Fe Ave. (Factory), Los Angeles, California
392 Clifton Ave., Newark, N. J.
510 Larkin St., San Francisco, Calif.
734 M. & M. Bldg., Houston, Tex.
237 Roosevelt Bldg., St. Louis, Mo.
37 W. Van Buren St., Chicago, Illinois

We can take care of your entire requirements of

MELCHIOR ARMSTRONG DESSAU CO. NEW YORK

MELCO BRAND

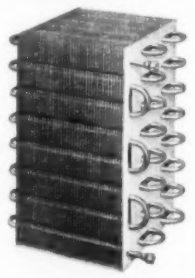
Refrigeration Parts and Supplies

Stocks at

116 Broad St., New York, N.Y. 523 Arch St., Phila., Pa.

Melchior, Armstrong, Dessau Co.

A NEW FIN COIL *by* PEERLESS



Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.,—aluminum tubing for ammonia.
Absolute Metal to Metal Contact.
A Superior Coil in which Soldered Return Bends have been eliminated.
Priced to meet 1932 conditions.
Write—Wire for Catalog.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

NO.	PUBLICATIONS	YOU PAY	YOU SAVE
1	Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book	$4.00	$1.00
2	Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book	$6.00	$2.00
3	Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book	$2.00	$1.00
4	Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year)	$3.50	$ .50
5	Refrigeration Directory and Market Data Book and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year)	$4.50	$1.50
6	Refrigeration Directory and Market Data Book and Electric Refrigeration News (17 Weeks)	$2.00	$1.00

Order by number. Use coupon below. These rates for U. S. only.

Group Order Rates for U.S. and Foreign Countries

PUBLICATIONS	NUMBER	UNITED STATES*	CANADA†	ALL OTHER COUNTRIES
Electric Refrigeration News	1 subscription	$3.00	$6.00	$4.00 These foreign
	5 or more, each...	2.75	5.75	3.75 rates will
	10 or more, each...	2.50	5.50	3.50 be increased
	20 or more, each...	2.25	5.25	3.25 on or before
	50 or more, each...	2.00	5.00	3.00 Jan. 1, 1933.
Refrigerated Food News	1 subscription	$1.00	$2.00	$1.50 These foreign
	5 or more, each...	.95	1.95	1.45 rates will
	10 or more, each...	.90	1.90	1.40 be increased
	20 or more, each...	.85	1.85	1.35 on or before
	50 or more, each...	.80	1.80	1.30 Jan. 1, 1933.
BOTH PAPERS	1 subscription	$3.50	$7.00	$5.00 These foreign
	5 or more, each...	3.25	6.75	4.75 rates will
	10 or more, each...	3.00	6.50	4.50 be increased
	20 or more, each...	2.75	6.25	4.25 on or before
	50 or more, each...	2.50	6.00	4.00 Jan. 1, 1933.

*U. S. and Possessions and Pan-American Postal Union Countries.
†High rates for Canada are due to Canadian tariff of 5c per copy

SUBSCRIPTION ORDER

BUSINESS NEWS PUBLISHING CO.,
550 Maccabees Bldg., Detroit, Mich. 1932

☐ Enclosed is remittance for $.....
☐ Please enter my order for COMBINATION OFFER NO.....at $.....
☐ Enter subscription to Electric Refrigeration News ☐ 1 Year $3.00. ☐ 2 Years $5.00.
☐ Enter subscription to Refrigerated Food News ☐ 1 Year $1.00. ☐ 2 Years $1.50.
☐ Send 1932 Refrigeration Directory and Market Data Book. $2.00 per copy.

Name .....
Address .....
City ..... State.....

8-24-32

REQUESTS FOR INFORMATION

Please refer to the 1932 Refrigeration Directory and Market Data Book for a complete list of all manufacturers of refrigeration equipment, parts, materials, supplies and accessories; also for all available statistical data on sales of refrigeration equipment, distribution methods, etc.

To obtain a copy of this book send $2.00 to Business News Pub. Co., 550 Maccabees Bldg., Detroit, Mich.

Advertisers will be given preference in published answers to requests for buyer's guide service, but a complete list of all known suppliers will be mailed if stamped, self-addressed envelope is enclosed with inquiry.

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Coronado Refrigerator

Query No. 906—"We desire complete specifications on the Coronado electric refrigerator similar to those given on the 49 makes of electric refrigerators in the June 29 issue of ELECTRIC REFRIGERATION NEWS. Also please advise how we may obtain circular No. 12, 1931, A.S.R.E."

Answer—We have no record of the Coronado electric refrigerator. A.S.R.E. publications may be obtained from the American Society of Refrigerating Engineers, 37 West 39th St., New York City.

Electric Meter Manufacturers

Query No. 907—"We are desirous of securing the names and addresses of all concerns that manufacture pre-payment electric meters for use in connection with electrical refrigeration. We understand there is a concern in California called the Meterice Co. Are there other concerns that manufacture a similar meter?"

Answer—The Meterice of America Co., Ltd., is located in the Pacific National Building, Los Angeles. Other companies manufacturing this type of equipment are the following: General Electric Co., Industrial Dept., Schenectady, N. Y.; J P. Seeburg, 1510 Dayton St., Chicago; Mills Novelty Co., 4100 Fullerton Ave., Chicago; and Thriftime Devices, 205 E. 42nd St., New York City. Still other manufacturers of these devices are listed in our 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK.

Defunct Refrigerator Companies

Query No. 908—"Will you kindly furnish us with the names of the electric refrigerator manufacturers that have gone out of business or are in the hands of the receivers since the industry began?"

Answer—It is very difficult, if not impossible, to determine definitely such a list. In the Trade Name Section of the 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK, you will find the names of all units of which we have any record. In the case of those known to be inactive or no longer in production, a notation to that effect is given.

Automatic Expansion Valves

Query No. 909—"Will you kindly advise how many refrigerator manufacturers use the automatic expansion valve and the number using the float type valve. Could you give us some authentic information on the number of automatic expansion valves used in the period of a year?"

Answer—In the June 29 issue of ELECTRIC REFRIGERATION NEWS we compiled a complete list of specifications on practically all important makes of refrigerators now in the market. Under the subheading "evaporator" you will find a statement for each company on the "Type of Refrigerant Control."

Thermometer and Time Recorder

Query No. 910—"Would you kindly give us some information on an advertisement which ran in ELECTRIC REFRIGERATION NEWS some time ago drawing attention to a combination thermometer and time recorder on sale at a very much reduced price."

Answer—The advertisement you refer to is that of the General Trading Co., 134 Meadow St., New Haven, Conn., which appeared in our June 8 issue. However, this device is only a time operation recorder, it is believed. Similar instruments may be obtained from the Bristol Co., Waterbury, Conn., and the Taylor Instrument Co., 95 Ames St., Rochester, N. Y. The Practical Instrument Co., 2711 N. Ashland Ave., Chicago, manufactures a recording thermometer.

Flexible Tubing

Query No. 911—"Will you please give us the name of a firm which manufactures a flexible tubing? We have seen flexible braided tubing on airplanes. This is the kind that we have in mind."

Answer—The flexible tubing such as used in aviation work can be obtained from the Bendix Aviation Corp., 105 W. Adams St., Chicago, or the Titeflex Metal Hose Co., 502 Frelinghuysen Ave., Newark.

Pamphlet on F-12

Query No. 912—"In the Engineering Section of ELECTRIC REFRIGERATION NEWS you mention that E. T. Williams and John Kenlon have prepared a pamphlet on F-12. Please advise us how one of these pamphlets can be obtained."

Answer—You may be able to obtain a copy of the pamphlet on F-12 from E. T. Williams, consulting engineer of Servel, Inc., 51 East 42nd St., New York City.

Lubricant for Compressors

Query No. 913—"I am greatly interested in securing an effective lubricant for compressors handling ethyl chloride."

Answer—The 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK lists several manufacturers of refrigeration oils but none have informed us that they offer lubricants especially adapted to ethyl chloride machines.

Methyl Chloride Compressors

Query No. 914—"We would appreciate it if you would send us a list of firms making methyl chloride compressors for ¼-hp. and up."

Answer—You can secure information from the Universal Cooler Corp., 7424 Melville Ave., Detroit, and Servel Sales, Inc., Evansville, Ind. A complete list of companies manufacturing compressors appears in our 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK. There are approximately 70 names in the list. Many of these companies make a machine that is suitable for either methyl chloride or sulphur dioxide.

Refrigerating Machines

Query No. 915—"We are developing a unit which will require a compressor of the size used on one- and two-ton refrigerating machines. Will you please give us the names of several companies manufacturing such units for sale to manufacturers in quantity lots."

Answer—We suggest that you communicate with the Universal Cooler Corp., 7424 Melville Ave., Detroit; Servel Sales, Inc., Evansville, Ind., and H. C. Parker, Ltd., 2600 Santa Fe Ave., Los Angeles. For a complete list of companies manufacturing this equipment, may we refer you to our 1932 REFRIGERATION DIRECTORY and MARKET DATA BOOK.

Dehydrating Tubes

Query No. 916—"Would you be kind enough to advise us of the manufacturers of dehydrating tubes that go into refrigerator counters?"

Answer—Kason Hardware Corp., 61 Navy St., Brooklyn, and the Garden City Plating & Mfg. Co., 1430 S. Talman Ave., Chicago, manufacture such a device.

Air-Conditioning Equipment

Query No. 917—"We would appreciate your rushing special data on manufacturers of air-conditioning equipment, both domestic and industrial."

Answer—See Aug. 10 issue of ELECTRIC REFRIGERATION NEWS. This issue, in both Merchandising and Engineering Sections, features air conditioning.

Rental of Refrigerators

Query No. 918—"Is there a company or a dealer who puts out electric refrigerators on a rental basis? If so may I have the name and address of such firms?"

Cup Receptacles in Water Coolers

Query No. 919—"Are there, at present, any manufacturers of water coolers for commercial offices and industrial plants, who make a provision, or have some sort of receptacle, *within* their water cooler for the disposal of waste paper drinking cups?"

Sipho Vac-U-Cups

Query No. 920—"Please send us the name and address of the manufacturer of the Sipho Vac-U-Cups."

MITCHELL TO DIRECT STATE BUREAU OF KANSAS

NEW YORK CITY—H. D. Mitchell, of Abilene, Kan., advertising manager of United Power & Light Corp., has been appointed state director for Kansas of the Electric Refrigeration Bureau by C. F. Farley, regional director of the Middle West division.

Mr. Mitchell succeeds L. A. Falk, of the same city, who recently resigned to become associated with the People's Ice Co., of Kansas.

REFRIGERATORS ARE LEADING SALES BUILDERS

DETROIT—The electric refrigerator is the leading sales builder in the furniture field today, according to Julius Rosenfeld, president of the National Retail Furniture Association, with executive offices in Chicago.

Mr. Rosenfeld is also president of the Continental Keller Co. of Council Bluffs, Iowa, Leonard electric refrigerator dealer in that city.

DELANO RETURNS FROM WESTERN TRIP

GREENVILLE, Mich.—F. A. Delano, general sales manager of the Gibson Electric Refrigerator Corp., has returned from a trip through the West. His itinerary included Kansas City, Mo.; Wichita, Kan.; Oklahoma City, and Denver.

THE CONDENSER

PAYMENT IN ADVANCE is required for advertising in this column. The following rates apply:

POSITIONS WANTED—Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. ALL OTHER CLASSIFICATIONS—Fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS AVAILABLE

INSTRUCTOR—position open for qualified Refrigeration Engineer with ability to instruct. Must be good correspondent, experienced in commercial estimating, installation and service work. Preference given man capable of preparing text for both resident and extension courses and in a position to invest $3,000 to $5,000 in well established school. State age, education, past experiences and minimum starting salary considered. Box 501.

POSITIONS WANTED

ENGINEER with all around experience extending over 14-year period in all phases of electric refrigeration desires connection preferably with newly organized electric refrigeration manufacturer. Box 499.

SUCCESSFUL hermetic and conventional type ice machine designing engineer. Will design, and build, compact efficient machine. Production working drawings four to six months. Put your idle equipment to work. Will work in advisory capacity to iron out your troubles. Box 500.

SERVICE TRAINING

HERKIMER Institute of Refrigeration, 1819 Broadway, New York, trains and supplies men for service exclusively, or combined service and sales. Clean cut men, selected for sales ability and trained for service will prove useful in both departments. Build a flexible, contented, permanent organization. Eliminate excessive personnel turnover. Special terms for group training. Write for detailed information.

EXPORTS TO FRANCE ARE DISCOURAGED BY TARIFF

WASHINGTON, D. C.—Recent tariff and quota developments are not encouraging for United States exports to France but optimistic factors are noted in business trends in Canada, the Philippines, and Alaska, according to a Department of Commerce statement based on cable and radio advices from its foreign offices.

Excerpts from the statement are as follows:

"French business continues at a slow pace and the rise in unemployment prevents any optimism; recent tariff and quota developments have clouded the outlook for United States exports to France.

"Business trends in Canada, though decidedly mixed, offer some grounds for encouragement, with trading in the Prairie Provinces improved by the crop situation, with the mining industry strengthening steadily, and with a somewhat better demand for agricultural implements in Ontario.

"The maintenance of firm export prices in the Philippine Islands has steadied the market in general and encouraged business interests.

"Exports of gold and commodities from Alaska during July were both above last year in volume; a record pack of red salmon is reported, but the canning of other varieties is being curtailed. Tourist traffic has been somewhat below normal."

TWO APPLES STORED FOR 7 MONTHS IN LEONARD

FORT SMITH, Ark.—E. H. Patterson, staff writer of the *Fort Smith Times-Record*, reports what, in his own words, is "the most remarkable case of domestic refrigeration he has ever known."

Mr. Patterson says: "On Nov. 25, 1931, my mother returned from a visit with my sister in Port Clinton, Ohio. She brought with her two Stark's Delicious apples, perfect specimens taken from a bushel which my sister bought from a farmer. On the night of her return, my mother placed these apples in a Leonard refrigerator which we have in our home.

"At noon, July 14, 1932, when I went home to luncheon, she had taken them out and cut one for our lunch. The apples were in a state of perfect preservation.

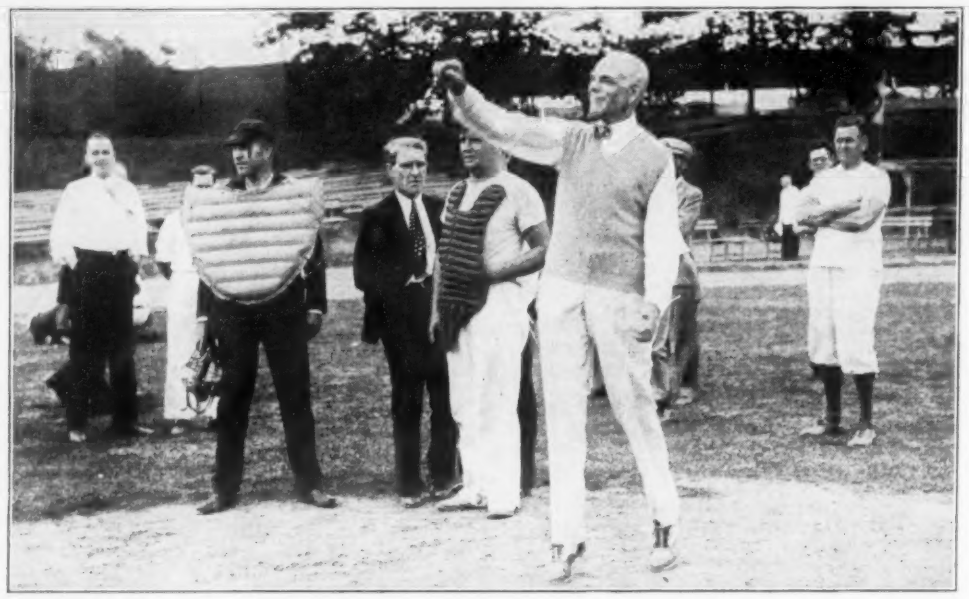
"These apples kept through one of the hardest winters we have ever had in this part of Arkansas and through a summer that up to now has seen temperatures hovering over the 90° mark."

BANDOLI TAKES FRIEND TO NEW POST

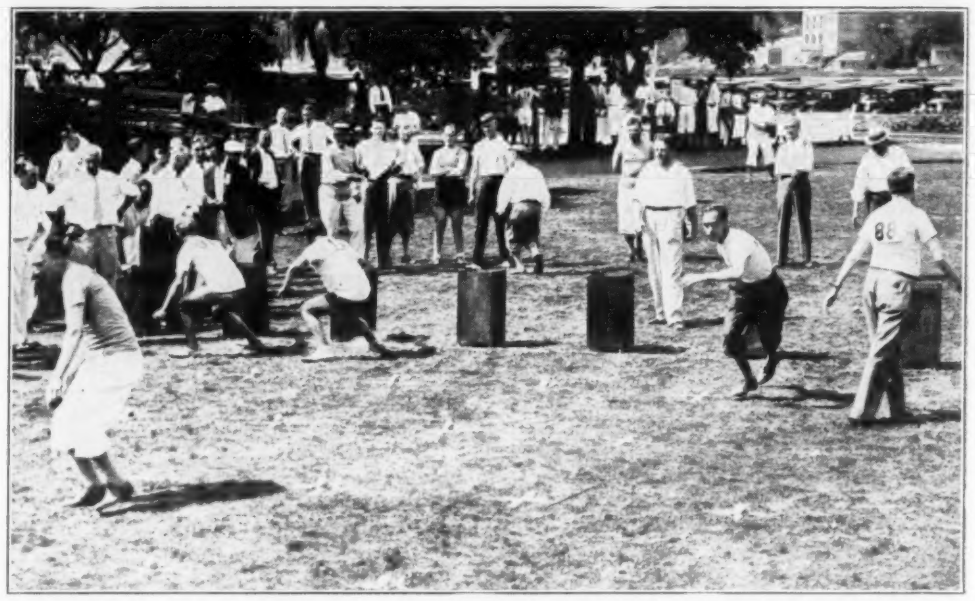
DALLAS, Tex.—When M. S. Bandoli was transferred here from Decatur, Ill., as Kelvinator district manager, he lost no time in having his friend, J. A. Bertha, transferred to Texas with him.

Bandoli and Bertha have worked together for six years; first they were together in southern Illinois, then with the Northern States Power Co., then with Kelvinator.

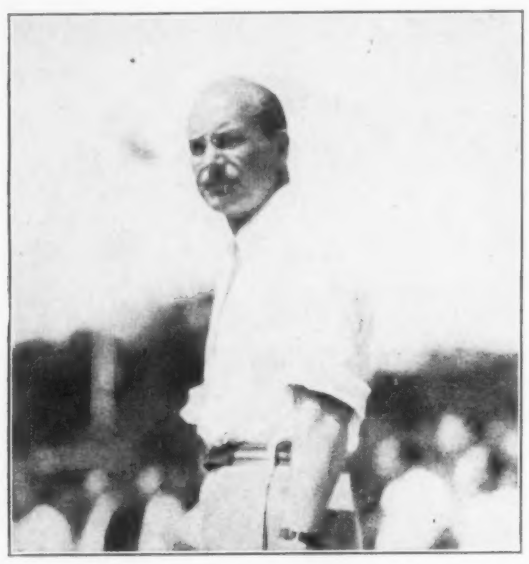
Rex Cole Athletes Seek 'Olympic Games' Prizes



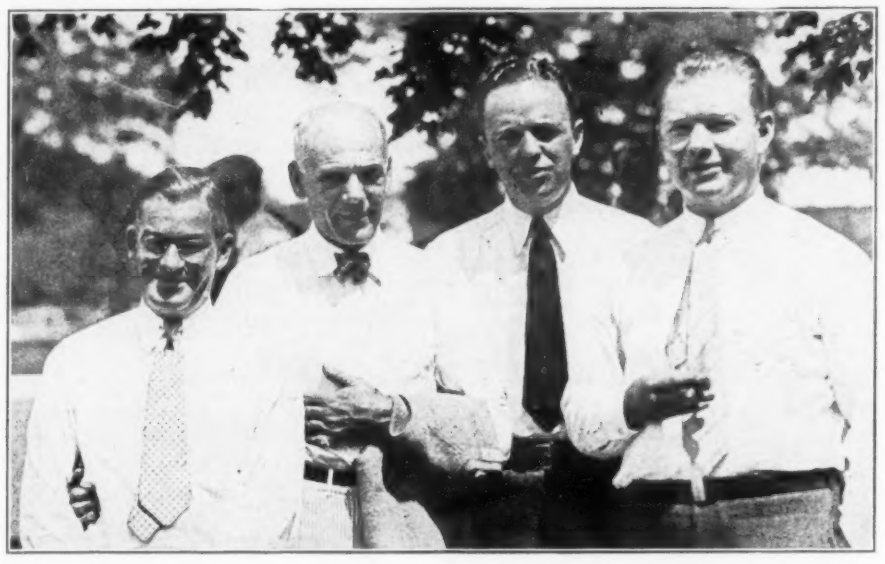
Rex Cole tosses out the first ball to open a game between the retail and apartment house divisions during the Rex Cole Olympic games. The apartment housers won, 13 to 12.



Rex Cole salesmen slip, slide, and pivot as the gruelling nine-heat potato race gets underway to give spectators one of the biggest wallops of a thrill-packed day.



E. Hamilton Campbell, sales promotion manager for Rex Cole, Inc., looks over the athletic field prior to making another announcement as master of ceremonies at the Cole Olympics.

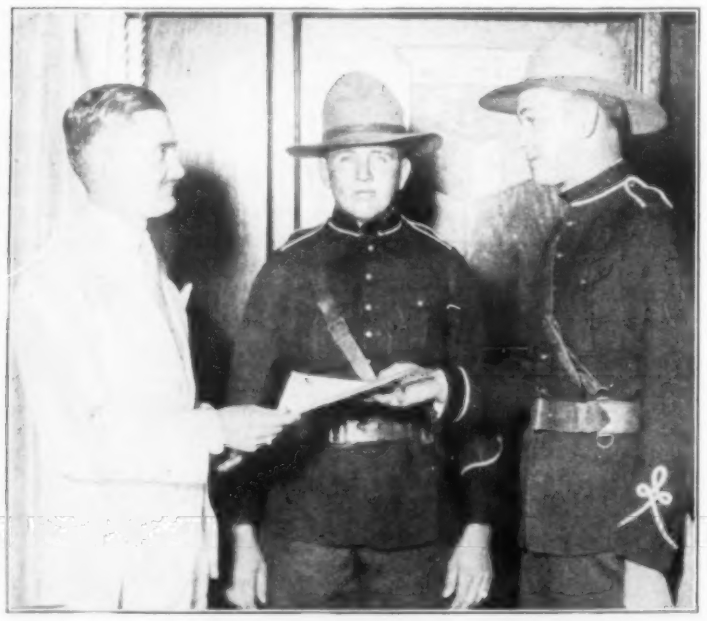


Four big shots leave the games at Travers Island long enough to pose before the camera. Left to right are Walter Daily, sales promotion manager of the General Electric refrigeration department; Rex Cole; Duane Jones of Maxon, Inc.; and Lou Maxon.

A pair of Rex Cole's uniformed Mason-Dixon employes come out to the island to cheer for anyone who happens to be participating in the refrigeration Olympics. These boys are part of Rex Cole's show.

The "big guns" of the Cole organization take some strenuous reducing exercises in the fat men's race of the Rex Cole Olympics. Charles Witherspoon, apartment house representative, shown fourth from the left in this picture, broke the tape to take first place.

Still another group of Cole salesmen learns the meaning of real team work as the pistol is fired to start the three-legged race at the Cole Olympics. Three hundred fifty colleagues saw the entrants plod uncertainly along the course at the company outing.



Clayton N. Stratton, Bay View Furniture Co., Holland, Mich., and Harry Lee, Detroit, receive orders as "Gibson MonoUnit Police" from Frank S. Gibson, Jr.

Two thirsty lads make a cold drink with ice cubes from a Stewart-Warner unit displayed at the recent Des Moines refrigeration show.

Col. Lemuel Q. Stoopnagle and Budd, the comedy pair of the Ivory Soap radio quarter hour, become so enthusiastic about electric refrigeration that they turn salesmen long enough to sell a Frigidaire.

WRITTEN TO BE READ ON ARRIVAL

Engineering Section

IN TWO PARTS PART TWO

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

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DETROIT, MICHIGAN, AUGUST 24, 1932

Entered as second-class matter Aug. 1, 1927, at Detroit, Mich.

THREE DOLLARS PER YEAR

DuPONT DEVELOPS NEW FINISH WITH SYNTHETIC RESIN

Chemicals Compounded To Make Base For 'Dulux'

PARLIN, N. J.—A new refrigerator finish has just been developed by E. I. du Pont de Nemours & Co., whose industrial finishes division is located here. "Dulux," as the new product has been named, is a synthetic resin finish using a binder material composed of distinct chemical compounds which form a tough, flexible resin binder for the pigment of the finish, according to John H. Stutt, director of sales.

Dulux finish consists of a coat of Dulux primer baked on at temperatures ranging from 15 minutes at 425° F. to two hours at 290° F., followed by two coats of the finish proper, he announces. The first coat of Dulux finish to follow the primer is baked at the same temperature as the primer, while the topcoat is baked for two hours at 260° F.

Both of the materials are manufactured and shipped at a consistency to be reduced 10 per cent with Dulux thinner, Mr. Stutt explains. The primer coat and the first finish coat are applied in a full wet spray, while the final topcoat is applied with a more or less dry spray in order to secure a satisfactory film hardness, and to minimize production line rejections due to finish damages from installing cabinet hardware, etc.

"An effective method of patching has

(Concluded on Page 8, Column 3)

2 NEW INSTRUMENTS DESIGNED BY TAG CO.

BROOKLYN—Two new products, a miniature recording thermometer and a square-case dial-indicating thermometer, are being introduced by the C. J. Tagliabue Mfg. Co. here.

The new Tag miniature-size recorders are furnished in two forms—the single-pen recording thermometer for charting temperature only, and the temperature and time-operation recorder, which writes a continuous record of temperature as well as the running and idling time periods of the motor.

The chart used by this recorder is 4⅝ in. in diameter. A bellows is connected by a capillary tubing with a sensitive bulb, which, in the self-contained type, is located outside on the back of the case. Any change in temperature at the bulb causes the expansion or contraction of the vapor in the closed system, thereby actuating the bellows, which motion is transmitted directly to the pen arm.

The Tag temperature and time-operation recorders are similar in construction to the temperature recorder, but have an electro-magnet mechanism for actuating a second time-operation pen, which records the idling and running time on the extreme outside zone of the recording surface of the chart.

The new square-case dial-indicating thermometer is furnished in two ranges —0 to 50° F., and —20 to +40° F. The indicating pointer is actuated by the motion of a bronze bellows of the system. The bellows is connected by a fine bore capillary tubing with a ⅜ x 3½-in. nickel-plated bulb. Any temperature fluctuation at the bulb is registered by the pointer almost instantaneously.

In addition to these instruments, the Tagliabue company is also manufacturing a Snapon automatic temperature and pressure controller, and an automatic Snapon controller with high temperature or high pressure cutout.

PORCELIER CO. ANNOUNCES NEW WATER COOLERS

GREENSBURG, Pa.—The Porcelier Manufacturing Co. here has just announced several portable vitrified-porcelain water coolers for use in electric refrigerators and ice boxes. They are built to resemble small kegs.

The coolers are made of glazed vitrified porcelain, are fitted with swivel chrome-plated spouts, and are available in green or white colors. The containers may be removed from the refrigerator for use on the buffet or table.

McCord Co. Devises Way To Fasten Fins To Pipe

DETROIT—McCord Radiator & Mfg. Co. has developed a new method of applying a continuous copper or steel fin to galvanized iron, steel, or copper pipe in ¾-, 1-, and 1¼-in. pipe sizes.

The finned pipe is suited to cooling of cold storage rooms, ice cream storage plants, and refrigerated trucks, the announcement states. In ice cream storage plants, forced convection is employed by placing a fan behind the cooling unit.

Welded construction with seamless steel headers forms a rigid, practically leak-proof unit that will refrigerate a room with a comparatively small space for the cooling unit, McCord engineers claim.

The following widths of fin are supplied: 1 in. with ¾-in. pipe, 1¼ in. with 1-in. pipe, and 1½ in. with 1¼-in. pipe. Various fin spacings are available—¼, ⅓, ½, and ¾ in. with copper fins, and ½ and ¾ in. in steel fins. The pipe is supplied in standard lengths up to 20 ft.

The finned pipe is manufactured by

(Concluded on Page 2, Column 2)

SERVEL INTRODUCES 3 PORCELAIN MODELS

EVANSVILLE, Ind.—C. A. Miller, sales manager of Servel Sales, Inc., announces that since Aug. 1, Servel Hermetic electric refrigerators have been available in porcelain exterior finish. Three models, the SB-5B, SC-6 and SB-7 comprise the new porcelain line.

The new line supplements a diverse series of refrigerator finishes that Servel has developed. In addition to the porcelain, there are two other available cabinet finishes—the heat treated, buffed white pyroxylin, and the new pearlescent finish in silver gray or green (described in column 5 on this page).

Although the company has been operating a complete porcelain plant, this is the first time that porcelain has ever been offered as an exterior finish. Prices for the new line are slightly higher than those for standard models.

FRIGIDAIRE MAKES LARGE HOUSEHOLD INSTALLATION

DETROIT—Probably the largest single household installation of refrigeration equipment in the country has just been made in the new residence of Hugh Dillman, financier here, by the Detroit branch of Frigidaire Sales Corp. The installation was made at a cost of $10,773.85, according to C. H. Lewis of Frigidaire, who made the sale.

The complete installation involves the use of 12 condensing units, which furnish a total of more than three and one-third tons of refrigeration, based on 14 hrs. of operation for equipment in various rooms of the home. All compressors are located in the basement.

Five FW-1450 1½-hp. compressors, each furnishing 715 lbs. of refrigeration in 14 hrs. of operation (based on 70° water and a 1-in. vacuum), 12 zigzag

(Concluded on Page 3, Column 1)

BUNDY INSTALLS LARGE HYDROGEN WELDING FURNACE

Evaporators, Condensers Can Be Made With New Equipment

DETROIT—A large copper hydrogen electric welding furnace for multi-welds and intricate metal assemblies for the refrigeration and automobile industries, has just been installed in the Bundy Tubing Co.'s Detroit plant.

Evaporators, condensers, receiver tanks, floats and other refrigerator parts can be welded in the new furnace, Bundy officials announce.

In copper hydrogen electric welding, any number of steel parts having several joints can be welded together simultaneously, engineers of the company explain. The steel parts are closely fitted together, copper powder or copper wire is laid around the joints, and the article is then passed through an electric furnace which is kept at a temperature somewhat higher than the melting point of copper, and in which a reducing atmosphere is constantly maintained.

The steel surface is first thoroughly deoxidized, so the copper will melt and flow over the steel and into the joints. The iron and the copper next alloy together, some of the copper going into solid solution in the steel, and some of the iron being dissolved by the copper to produce an integral alloy bond between the parts to be welded.

The article is then cooled, also in a reducing atmosphere, thus preserving a clean steel surface, and the copper solidifies giving a strong continuous weld.

Aiding the copper to flow completely through the joint to give a continuous, gas-tight weld, are the mutual affinity of copper for iron and of iron for copper, capillary attraction, the uniform temperature of the steel, and the deoxidized condition of the steel surface, Bundy Tubing executives state.

The new Bundy hydrogen electric furnace is of the semi-continuous pusher type and is entirely automatic. The entire unit is built in a steel shell 6 ft. in diameter and approximately 82 ft. long, the first 20 ft. being the heating chamber, which is bricked in the shell, and

(Concluded on Page 2, Column 1)

* * *

Sulphur Dioxide

Specifications of refrigeration-grade sulphur dioxide for use in household electric refrigerators, and properties of that refrigerant that lend it to small machine use are described on pages 4 and 5 of this section by Chas. W. Johnston of the Virginia Smelting Co.

Similar information about the use of methyl chloride will be featured in the next Engineering Section of the News, Sept. 7.

New Westinghouse Air-Conditioning Dept. Started

EAST PITTSBURGH, Pa.—A complete organization for the engineering, development, and sales of air-conditioning apparatus has been organized by the Westinghouse Elec. & Mfg. Co. for the purpose of coordinating the company's activities in that field, according to J. S. Tritle, vice president and general manager.

Included in the company's study of all types of air-conditioning problems are reversed refrigeration, cooling, humidifying, dehumidifying, air circulation, and cleaning.

J. W. Speer, formerly manager of machinery electrification, has been appointed manager of commercial air-conditioning products, diversified products department, in charge of the sale of commercial and railway air-conditioning apparatus.

R. C. Cosgrove, manager of refrigeration division, will head domestic sales. W. C. Goodwin, supply engineering department, is in charge of engineering and development.

NEW 'FLOATED' UNIT ADOPTED BY GRINNELL

GRINNELL, Iowa—A new "floated" machine unit has been adopted by the Grinnell Washing Machine Corp., manufacturers of the Grinnell electric refrigerator. Flared joints have been eliminated, officials of the company report, all joints now being welded.

Compressor cylinder heads are now made with fins to dissipate heat, the cylinder base is heavier, with more gasket space, and a new intake port eliminates the valve in the piston head, the designers state. The unit also has a new seal which gets tighter as the inside pressure increases. Another change is the standardization on capacitor type motors.

The new models are now built in all-steel cabinets, with the machine unit in the top. It can be removed and replaced with a new unit in five minutes, the designers state.

J-M CORP. DISTRIBUTING NEW ELECTRICAL OUTLET

COLUMBUS, Ohio—The J-M Corp. here is opening distribution of the J-M-C tap, a new electrical outlet designed to minimize the cost and inconvenience of installing conventional wall and floor outlets. It is being manufactured in four models and five colors.

The J-M-C tap consists of a plug-in socket, with a steel tube approximately 11 in. long extending from the bottom of the socket. The overall length is 14½ in. Wires run from the socket down through the tubing.

Installation of one of these taps is made by boring a 13/16-in. hole in the floor, 3/16 in. from the baseboard. The hole may be bored directly through the moulding. The steel tube is then inserted through the hole, the socket adjusted to the proper height on the base-

(Concluded on Page 3, Column 1)

SERVEL CABINETS NOW AVAILABLE IN PEARL FINISH

Offering Pearl Essence Popularized by New Automobiles

EVANSVILLE, Ind.—Servel electric refrigerators are now available in the new pearl finish which has characterized several of the latest models of automobiles. They are offered in two colors, pastel green and silver gray, at a small addition to list prices.

Popularly termed "Pearlescent" or "Pearl Essence," the finish differs from the conventional lacquers in that it registers a depth perception, and resembles the gloss and lustre of a pearl. It also has iridescent qualities, Servel executives state, since when viewed from different angles, the cast or color seems to change with the light reflection.

A series of tests indicates that the finish will be suitable for refrigerators, the announcement states. A lemon test was made to determine its acid-resistant properties; a mechanical rubbing test using a stiff brush that made 129,000 strokes did not wear out the lacquer; a similar rubbing test was made with a salty rancid butter as a brushing compound; and a flame test (holding a lighted match against the finish) caused no damage, Servel engineers report.

HISTORY, DESCRIPTION OF PEARL ESSENCE

By John T. Schaefer

DETROIT—Pearl essence lacquer finishes which are now being used on Servel electric refrigerators, as well as on Graham-Paige and other automobile bodies, use as their basic material, a substance known as guanin (a silvery component in the skin of many species of fish), according to Frederick G. Weed, director of research, Rinshed-Mason Co., manufacturer of the pearl lacquer.

Guanin is rubbed off the scales of fish, freed from foreign material, and suspended in a suitable liquid to form pearl essence which may be carried in a lacquer binder, and applied in a manner similar to methods used for ordinary lacquers.

Metal to be finished is first cleaned and given an oil, pyroxylin, or synthetic type of undercoating. Coats of pearl lacquer are then sprayed on and either baked at 135° F., or air-dried for 6 to 8 hours, Mr. Weed explains.

When properly applied on the outside of objects, pearl essence imitates genuine pearl quite satisfactorily, Harden F. Taylor, writes in Document No. 989 of the Department of Fisheries.

"When incorporated properly in celluloid plastics, it makes the imitation mother-of-pearl in common use for the backs of hand mirrors, manicure and toilet sets, etc.," he states.

Taylor traces the discovery of pearl essence to the middle of the seventeenth century when a French rosary maker named Jaquin noticed that the water in which a small fish had been washed, contained a highly lustrous substance which, when concentrated by sedimentation, suggested pearl, and that the application of it to small globes of alabaster, wax, etc., produced good imitation of pearls. Jaquin's pearls gained a reputation, and apparently enjoyed considerab' distribution.

Through the years European technicians improved methods of applying the substance, and in 1861 Barreswil identified the material as guanin, a compound which had just been discovered in the

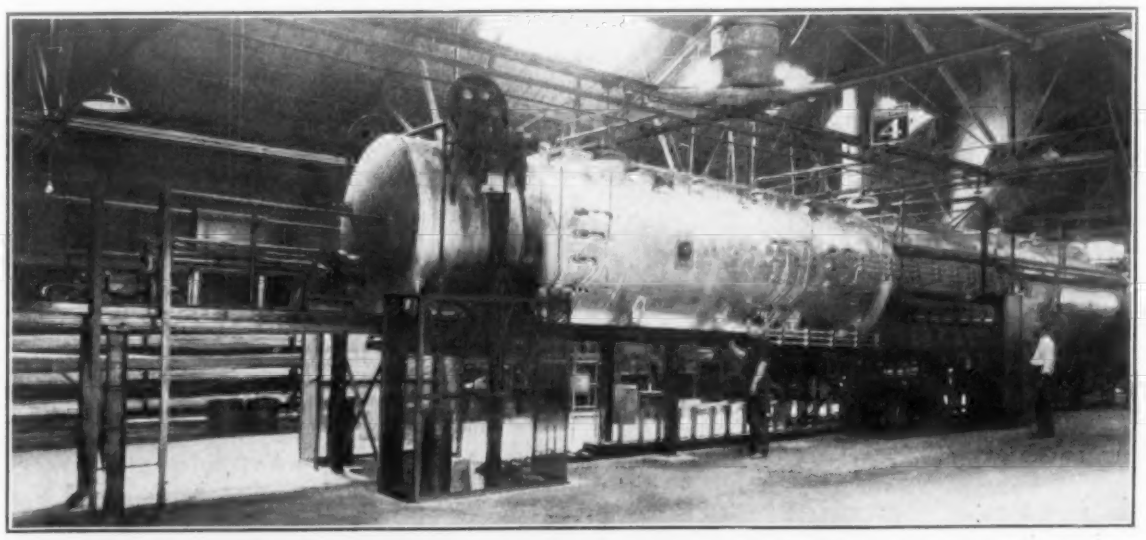
(Concluded on Page 8, Column 1)

SOLID CO-2 NOT SUBJECT TO CARBONIC SALES TAX

WASHINGTON, D. C.—Solid carbon dioxide will not be subject to the tax in the Revenue Act of 1932 on carbonic acid gas, the Bureau of Internal Revenue announced on Aug. 17 in an informal ruling.

Solid carbon dioxide is not suitable for the manufacture of carbonated beverages, but anyone who converts the material back into carbon dioxide gas for use in manufacturing beverages would be subject to the tax on the gas, according to the ruling.

Bundy's New Zeppelin Type Hydrogen Furnace



Evaporators, receiver tanks, floats, etc. can be welded in Bundy's new furnace, described above.

BUNDY INSTALLS NEW WELDING EQUIPMENT

(Concluded from Page 1, Column 3)

the next 60 ft. the cooler, which is jacketed for water cooling.

In order to reduce heat losses into the cooler, the heating chamber and the cooler are connected by a rectangular throat which is built of fire brick and insulation. The dimensions of the throat limit the size of the work that can be sent through the furnace to 17x13x30 in.

The reducing gas is fed into the heating chamber at a point near the throat and flows out through the charging and discharging openings at both ends of the furnace. Nichrome ribbon resistors are mounted in loops on the side walls and on the floor of the heating chamber.

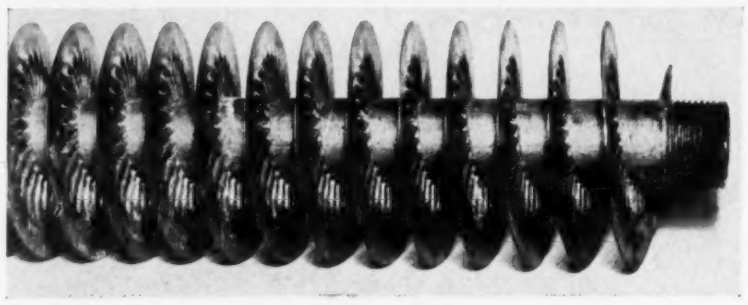
The work is carried on cars 2 ft. long, which are loaded on a lower conveyor running underneath the entire length of the furnace, and are pushed through the furnace on another double track disc-wheel alloy conveyor in a lower temperature chamber, built beneath the floor of the heating chamber. The work is brought into the heat zone on supports which extend up from the cars through a longitudinal opening in the floor of the heating chamber.

An elevator at each end of the furnace brings the cars to the level of the upper and lower conveyors, and hydraulic pushers alternately move the train of cars on the conveyors one car length, and push the last car on the charging or on the discharging elevator.

Due to the relatively high temperature of the copper hydrogen welding process, the steel is thoroughly annealed, is free from localized strains, and has clean, inside and outside, surfaces free from scales and oxides. Due to the high melting point of the welding metal, the steel can be heat treated, or can be used at elevated temperatures without affecting the welds, Bundy men claim.

The furnace can weld intricate castings and forgings, as well as stampings.

Fins Applied to Galvanized Pipe



McCord engineers have developed finned pipe for cooling low-temperature rooms, refrigerated trucks, etc. Galvanized iron pipe is used; fins are either copper or steel.

* * *

McCord Co. Devises Way to Fasten Fins to Pipe

(Concluded from Page 1, Column 2)

specially-developed McCord machinery which winds the fins on the pipe by stretching the outer portion of the ribbon without corrugating it, and applying the fin to the pipe under a very high pressure to provide a tight metal-to-metal contact. The bond is further strengthened by tinning or galvanizing.

The lineal foot contact of the fin to the pipe is increased by slightly corrugating the base of the fin, and fabricating the fin with the inside portion thicker than the outside edge. The copper fins are tinned, according to the announcement, while steel fins are either tinned or galvanized to a customer's specifications.

Laboratory tests of 1¼-in. plain galvanized pipe compared with 1¼-in. McCord finned pipe using 1½-in. copper fins with ¾-in. spacing, showed that 1 ft. of finned pipe has the same capacity as 3 ft. of plain pipe, the designers report.

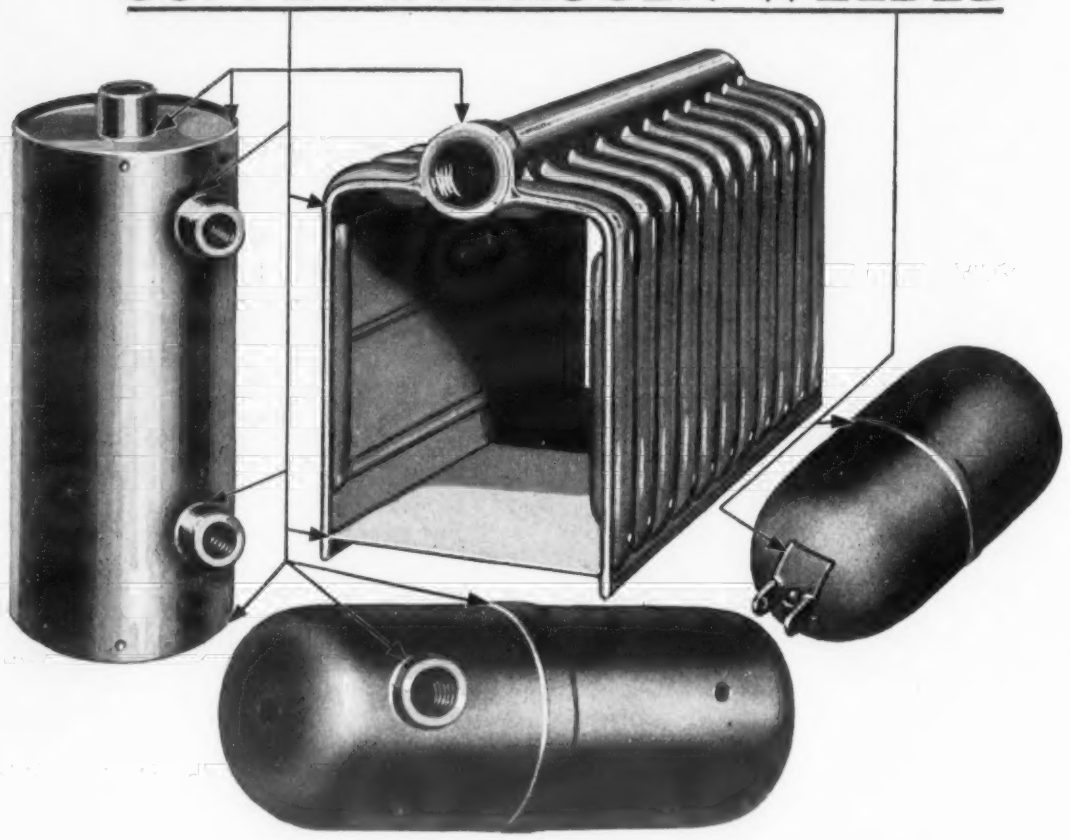
Changing the fin spacing to ½ in. increased the finned pipe's capacity to four times that of the same length of plain pipe. A further change in fin spacing to ¼ in. increased the capacity to seven times that of the same length of plain pipe, the tests indicated.

ICE-O-MATIC FACTORY MEN TRIM DISTRIBUTOR'S TEAM

BLOOMINGTON, Ill.—Williams Oil-O-Matic Heating Corp.'s factory baseball team took the large end of the 7-3 score in a recent game with the team sponsored by A. Dirksen & Sons, Ice-O-Matic distributor in Springfield, Ill.

Team members and their backers came to Bloomington by automobile. After the game they were entertained by company officials at a dinner in the Williams Cafeteria. M. E. Ticen, assistant sales manager of the Ice-O-Matic department, was toastmaster.

COPPER HYDROGEN WELDED



An economical process for welding steel parts . . . adding great strength . . . complete assemblies welded at one operation

Above is illustrated a few of the important electric refrigerator parts—evaporators, tanks and floats—which have been Copper Hydrogen Electrically Welded.

This process is a great innovation for the refrigerating industry. It permits multi-welds at one operation, thus eliminating many manufacturing steps which save you money.

By Copper Hydrogen Electric Welding a number of steel parts can be welded at one operation, with pure copper at all points of contact.

This insures longer life—permanent strength at all joints—gas tightness. Because produced in a reducing atmosphere you get a clean scale-free surface.

We are now furnishing the above illustrated parts and many others. Correspondence is invited with manufacturers interested in this advanced process of commercial welding. Write for complete information.

BUNDY TUBING CO.

Detroit, Mich., U. S. A.

ALSO MANUFACTURERS OF **BUNDYWELD** STEEL TUBE

Comments on Air-Conditioning Issue

And Other Letters from Readers

A Compliment and A New Humidifier

Holmes, Inc.
Stephenson Building, Detroit
Aug. 15, 1932.

Editor:

First, permit me to congratulate you and your staff on a remarkably fine "Air-Conditioning Issue."

It is good to know that this infant industry is to have sane guidance.

Reading the list of specifications I had hoped to find the name of the Automatic Humidifier Co.—who make the drip evaporators for most of the equipment listed.

Probably, due to the newness of the subject, the man who compiled the list overlooked the "Humidrip." I am enclosing some folders we prepared describing this product and another by the same company.

W. H. HOLMES.

Wants to be Informed About the Next One

The Ohio Electric Mfg. Co.
5900 Maurice Ave., Cleveland
Aug. 16, 1932.

Editor:

We have been reading with a great deal of interest your issue of Aug. 10 having to do with air conditioning. As we, being motor manufacturers, have been taking quite a keen interest in the progress of this industry.

I do wish we had known about this issue of yours, being directed particular to air conditioning as we should like to have considered advertising in the air-conditioning section and would have been tickled to death for the opportunity of preparing an article on the subject of Air-Conditioning Motors for your paper as I note that quite a number of your articles having to do with air-conditioning equipment and appliances were prepared by representatives of such manufacturers.

My purpose in writing to you now is to ask if you won't inform us when the next issue should have particular reference to this subject so that we can consider whether or not to take space.

R. N. JESSOP,
Assistant sales manager.

Another Company for The Directory

Pennsylvania Furnace & Iron Co.
Warren, Pa.
Aug. 13, 1932.

Editor:

We had the privilege of looking at your air-conditioning issue of Aug. 10 and were surprised to note that, in the air-conditioning directory, we are not listed.

Being the oldest manufacturers of gas furnaces, and of late marketing air conditioning in connection with these, we believe our name should be added to your list and will be pleased to give you literature if you so desire.

R. L. BLODGETT,
Assistant secretary-treasurer.

Thorough Coverage

Lewis Air Conditioners, Inc.
829 Second Ave., South, Minneapolis
Aug. 18, 1932.

Editor:

We have read with great interest the copy of the Aug. 10 Air Conditioning Number of ELECTRIC REFRIGERATION NEWS, which you so kindly mailed us. We certainly wish to congratulate you on your very thorough coverage of the subject, which we know will be of direct benefit to those engaged in the air-conditioning industry. We are glad to see such an aggressive editorial policy as yours.

ALBERT G. MATHER.

Congratulations From a Unit Manufacturer

Young Radiator Co.
Racine, Wis.
Aug. 15, 1932.

Editor:

The Aug. 10 issue of ELECTRIC REFRIGERATION NEWS and sections given to engineering all featuring air conditioning is before me. You are to be congratulated on this excellent piece of work in bringing this material about which is more or less of an unknown science to the general trade today.

More information of this nature will serve to enlighten this science to our potential buyers of this equipment.

We are somewhat directly and then perhaps moreso indirectly interested inasmuch as we manufacture heat transfer apparatus for various manufacturers of complete equipment.

Also we manufacture a unit cooler of suspended type for cafeterias, restaurants, public buildings, offices, and the like. This is equipped with a multi-speed motor, compelling a quiet operating disc fan circulating air through a copper core section through which either brine or cold water is circulated.

It occurred to me inasmuch as this unit is now being brought to the trade through some 45 distributors that we have around the United States that it would be interesting for you to have some information on this, and if you may care to place an article in your paper covering this subject, we will have our sales manager, F. H. Ine, send photographs and articles to you on same.

F. M. YOUNG,
President.

Conditioned Air Units, Universal Machines

Conditioned Air Corp.
Ford Building, Detroit
Aug. 12, 1932.

Editor:

I have been reading over the ELECTRIC REFRIGERATION NEWS for Aug. 10, and want to congratulate you on the very complete data available for air conditioning. It is the finest display of articles covering equipment and merchandising on this subject which I have seen to date.

I note on page 8 you show a picture with a notation under it as follows: "Cut-away of air conditioner by Universal Cooler, using Flintlock coils." The unit illustrated here is the 3-ton Airco unit of the Conditioned Air Corp.

I also notice on page 14, first paragraph in the second column, that you state the Mary Lee Candy Shop is air conditioned by the Universal Cooler. The Conditioned Air Corp. sold and installed the system in this store. The same is true of the Jefferson Arms Tea Room article. I think the confusion resulted from the fact that we use Universal Cooler compressors with our system.

G. L. SCHUYLER.
President.

Correcting a Title

A. L. Nugey
Rahway, N. J.
July 20, 1932.

Editor:

The writer has been advised that you have recently published an article relative to processes dealing with very low cold temperatures, and that the writer was connected with the Brunswick-Kroeschell division of the Carrier Engineering Corp.

Will you please correct this article in your very next issue that the writer is not connected with the aforementioned companies. We maintain a consulting office and handle special applications for refrigeration for any firm interested in specialists knowledge of this art.

A. L. NUGEY.

National Organization of Service Men Urged

Howard A. Middleton
212 South Ohio St., Sedalia, Mo.
Aug. 16, 1932.

Editor:

Regarding the compressor pictured on page 5 of the Aug. 10 issue of the Engineering Section we believe that this is a Surecold made by Warner Steel Products Co. at Ottawa, Kan.

Incidentally why not more attention to a national association of independent service men sponsored by the NEWS. As time goes on there will be more and more need for service for various unknown makes of equipment not to mention the need for lower service costs which can best be accomplished by independent organizations. We believe that this will eventually extend even to the hermetically sealed domestic jobs which can be factory serviced only at excessive cost. Here's hoping for a nation-wide association of bigger and better independent service men. As usual we expect the NEWS to lead the way.

H. A. MIDDLETON.

Identification of the Compressor Picture

The Electric Sales Co.
Corpus Christi, Tex.
Aug. 15, 1932.

Editor:

The picture that you have on page five of the Aug. 10 Engineering Section under the heading of "What Is It?" is a three-cylinder, 1½-hp., air-cooled Warner Steel Products Co. "Sure Cold" refrigerator. Parts and service may be secured by writing the Warner Steel Products Co. at Ottawa, Kan.

JOHN REMONTE.

G-M LABORATORIES DEVISE NEW PHOTO-ELECTRIC UNIT

CHICAGO—The G-M Laboratories, Inc., here is announcing a new photo-electric relay, the Foto-Switch, embodying an electro-magnetic switch which is opened or closed by the interruption or variation in illumination on the photo-electric cell.

The Foto-Switch controls electrical devices such as motors, electric signs, signals, or alarms, through the medium of a light beam. The apparatus is also suitable for use in many commercial applications which do not require the ruggedness demanded of industrial installations.

The unit may be used with door-opening devices, burglar alarms, for counting people or products, etc.

LARGE INSTALLATION MADE BY FRIGIDAIRE

(Concluded from Page 1, Column 2)

pipe coils, two Penn switches, and five F. S. valves comprise the equipment used for refrigerating the rug storage and fur storage rooms in the basement of the residence.

The rug storage room is 36 ft. long, 13 ft. wide, and 9 ft. high. The fur storage room is 27 ft. long, 13 ft. wide, and 9 ft. high. Both rooms are insulated with 4 in. of cork.

Refrigeration for the cold room, adjoining the kitchen in the basement, is supplied by one FW-4150 compressor connected to two 1866-F coils installed in a Chrysler & Koppin refrigerator having a capacity of approximately 213 cu. ft.

The basement flower room is equipped with a Chrysler & Koppin refrigerator equipped with a 1242-F coil which is cooled by an FW-233 ⅓-hp. compressor supplying 265 lbs. of refrigeration. A Penn thermostatic control switch regulates the system.

Two compressors are used to operate the equipment in the basement ice cream room. One of the compressors is an FW-3100 1-hp. model, supplying 660 lbs. of refrigeration, and the other is an FW-4150 1½-hp. unit, supplying 715 lbs. of refrigeration.

These two compressors operate a No. 16 bulk ice maker, with a capacity of 300 lbs. of ice, and a 20-qt. Emery Thompson ice cream freezer. The equipment for this room also includes a 2x2x3-ft. brine tank and two 30-X coils.

In the servants' dining room, located in the basement, is a P-612 water cooler equipped with a glass filler.

In the serving room on the main floor is an ice maker with a 432-cube capacity, equipped with three No. 16 coils and refrigerated by an FW-275 ¾-hp. compressor supplying 365 lbs. of refrigeration. Also in this room is a 12-cu. ft. Chrysler & Koppin refrigerator containing a 117-TF coil, cooled by an FA-125 ¼-hp. compressor supplying 119 lbs. of refrigeration.

The pantry on the main floor is equipped with a Chrysler & Koppin refrigerator with a 50-cu. ft. capacity. An 18-TF coil, cooled by an FW-250 ½-hp compressor having a 365-lb. refrigeration capacity, is installed in the refrigerator. This unit is equipped with a cold control. A portable two-hole ice cream cabinet is also used in this room.

All compressors are water cooled except the one used to cool the refrigerator in the serving room.

J-M CORP. DISTRIBUTING NEW ELECTRICAL OUTLET

(Concluded from Page 1, Column 4)

board and fastened by means of one screw above the socket.

The lower end of the tubing is then attached to a junction box, from which connections are made to the house wiring by means of BX tubing running from the junction box. If connections are made to the open wiring, an end fitting may be used on the end of the steel tubing.

Where the tap is installed on floors above the main floor, BX tubing, containing wires, is attached to the lower end of the tap's tubing, and is run down through the walls to the basement, where connections are made with the junction box, and, in turn, to the house wiring.

The tap is made in four models. Model 1 is a heavy duty, 15-ampere tap built for use where there is a heavy pull or an off-and-on pull, such as that provided by electric refrigerators, irons, beauty parlor appliances, etc.

No. 2 is a radio tap provided with a polarity plug which is inserted in aerial and ground outlets. No. 3 is a tap with three 5-ampere electrical outlets.

No. 4 is a combination electric and radio tap. In this fixture, a three-way electric outlet and radio ground and aerial outlets are combined. A polarity plug is furnished for the radio outlet.

The taps are furnished in mahogany, oak, white, ivory, and jade green.

Actual production of the taps was started four months ago, although developmental work had been underway for more than a year, according to W. A. Zerbe, sales manager of the J-M Corp.

Distribution of the taps is now being handled largely by Graybar stores in the central part of the United States, but merchandising of the products may be extended to leading electric refrigerator distributors in the country in the near future, according to Mr. Zerbe.

COPELAND EQUIPMENT PLACED ON TWO LIGHTSHIPS

CAPE COD, Mass.—Two lightships, stationed off Cape Cod on Pollock Rip, have been equipped with Copeland electric refrigeration. They are the *Pollock*, which is equipped with a model Q condensing unit, and the *Boston*, equipped with a model Q Copeland compressor, a No. 43 Copeland coil, and a P-32 cabinet.

Two other lightships have been similarly equipped previously.

ENGINEERING FIRM ORGANIZED IN BALTIMORE

BALTIMORE—Harry Read and O. Roland Read have organized a company here known as Air Conditioning Engineers, Inc.

Their offices are located at Reisterstown Road and Elgin Ave.

WESTERN FIRM TO BUILD SOLID CO-2 PLANT

ARCADIA, Calif.—The Imperial Products Co. here has just leased a tract of more than 800 acres of land near Salton Sea as the site of a new plant for manufacturing solid carbon dioxide, according to Carl M. Einhart.

MOHAWK EQUIPMENT IS INSTALLED IN MARKET

NORTH TONAWANDA, N. Y.—Mohawk electric refrigeration equipment has been installed in the meat market owned by E. Miciotta, 205 Avenue U, Brooklyn, according to the All-American Mohawk Co.

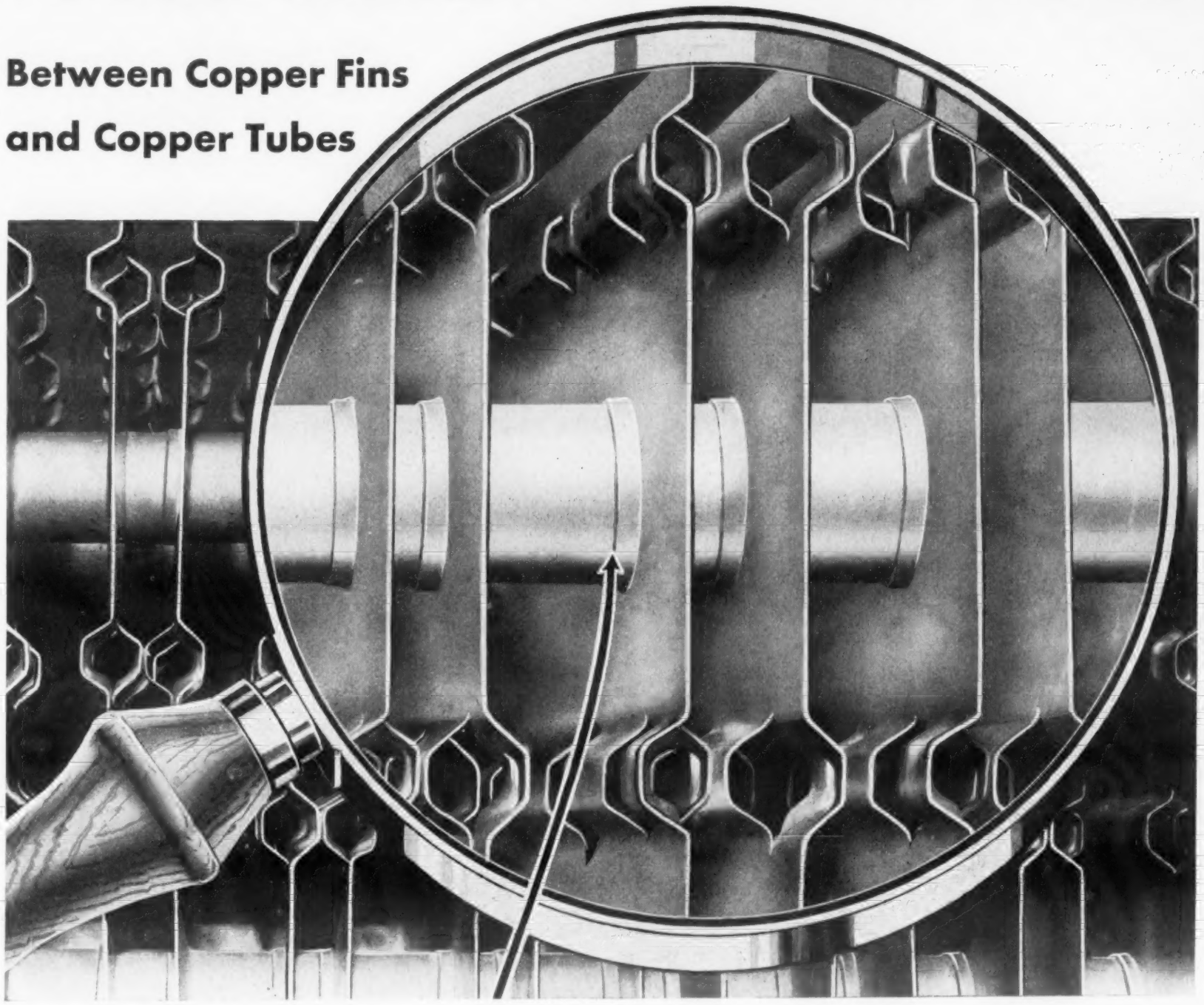
H. C. PARKER, LTD., MOVES LOS ANGELES OFFICE

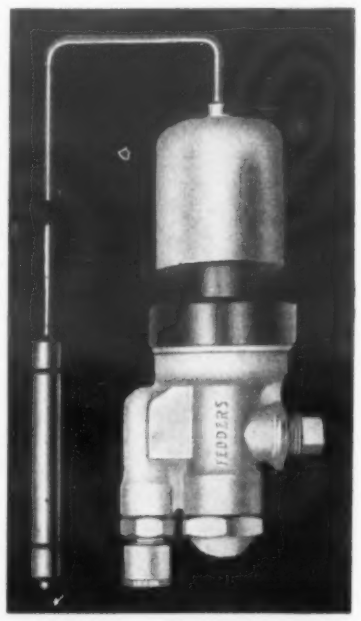
LOS ANGELES—H. C. Parker, Ltd., manufacturer of commercial condensing units and Parker electric refrigerators, announces the removal of its offices from 2600 Santa Fe Ave. to 2627 Santa Fe Ave. here.

ONLY FEDDERS GIVES YOU THIS

FUSED METAL-TO-METAL BOND

Between Copper Fins and Copper Tubes





Fedders Thermostatic Expansion Valve

Combined with Fedders Non-Frost Dry Expansion Commercial Evaporators makes a complete Low Side with perfect control for single and multiple installations.

10 Exclusive Features Found Only in FEDDERS NON-FROST EVAPORATORS

1. COPPER FINS AND TUBES: greatest known heat transfer agents measured in actual B. T. U. dissipation!
2. FINS FUSED TO TUBES: providing Metal-to-Metal Bond eliminating solder (dead metal) interference!
3. ELECTROLYSIS IMPOSSIBLE: use of copper fins and copper tubes removes all possibility of electrolytic atcion between fins and tubes!
4. FLUTED FINS: gain as much as 5/8" greater fin surface per fin or approximately 9% more refrigerating VERTICAL FIN SURFACE per cubic foot of air flowing through evaporator!
5. AIR TURBULENCE: hexagonal flues create increased thermal efficiency!
6. FEDDERS B. T. U. RATING: based on ONLY 14 HOURS running or actual operating time!
7. COMPARE FEDDERS B. T. U. RATING: with those based on 24 hour operation!
8. FEDDERS 3/4" O.D. TUBING: provides greater refrigerant circulating area and eliminates oil pockets, etc.!
9. GREATER RIGIDITY OF EVAPORATOR: due to its fluted self-reinforcing fins BONDED to Heavy Tubing by Fedders exclusive and permanent fusing method!
10. SILVER SATIN EXTERIOR FINISH: special electro plating process provides life-long beauty with no service worries from oxidation, corrosion and chemical reactions!

The complete Fedders Hand Book on Commercial Non-Frost Evaporators is worth having . . . write for your copy!

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Specialists in Heat Transfer Devices Since 1896

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PALMER DESCRIBES FIN-COIL EVAPORATOR

DETROIT—In the design of domestic evaporators, the highest practical temperature of the evaporator surface should be produced for cooling the food compartment, while the lowest practical temperature should be maintained in the ice tray sleeve for making ice cubes, according to George B. Palmer, refrigerating engineer of the McCord Radiator & Mfg. Co.

Rapid Freezing

Supporting this statement, Mr. Palmer states: "In a domestic evaporator, quick freezing and economical operation can only be accomplished with a minimum temperature difference between the refrigerant circulated, and the ice tray sleeve.

"The lower the back pressure and temperature of the refrigerant, the more rapidly the ice cubes will be frozen, but the higher the back pressure and temperature of the refrigerant, the more economical will be the operation of the machine."

Dehydration Factor

On the other hand, he showed that in the food compartment, the lower the temperature of the surface which cools the cabinet, the greater will be the dehydration of food in it.

Mr. Palmer then showed how these aims have been incorporated in the design of McCord domestic evaporators by direct metallic intersleeve contact of the refrigerant-carrying tubing, and the use of fins with considerable surface for cooling the food compartment.

Operation of McCord Evaporator

The path of the refrigerant is first to the ice tray sleeve, then to the fin surface supported above the sleeve, in order to insure the refrigerant's contact with the sleeve whenever the machine is running. The thermal control switch bulb at the end of the finned tube surface tends to promote more rapid freezing by keeping the machine running a longer time when new water is placed in the ice trays, Mr. Palmer explains, thus prolonging the time required for the frost line to reach the control bulb.

"Location of the spiral fin tube surface above the ice tray sleeve and at the end of the refrigerant path tends to give an automatically defrosting surface between cycles, and to cool the circulating air in the food compartment before it reaches the sleeve, thereby reducing the tendency of the circulated air to raise the sleeve temperature," Mr. Palmer states.

The use of the spiral fin surface at the end of the refrigerant path also helps to prevent "frosting back" of the suction line, he concluded.

Majestic Studying Air-Conditioning Market

CHICAGO—The research laboratories and the merchandising experts of the Grigsby-Grunow Co., manufacturer of the Majestic refrigerator, are actively engaged in a study of the air-conditioning field, with the possibility that the company may enter the field next year, states John F. Ditzell, sales manager of the refrigeration department.

The factory research department is experimenting with several different designs of unit type air conditioners, while the merchandising experts are studying market potentialities of comfort cooling and the various possible methods of distribution.

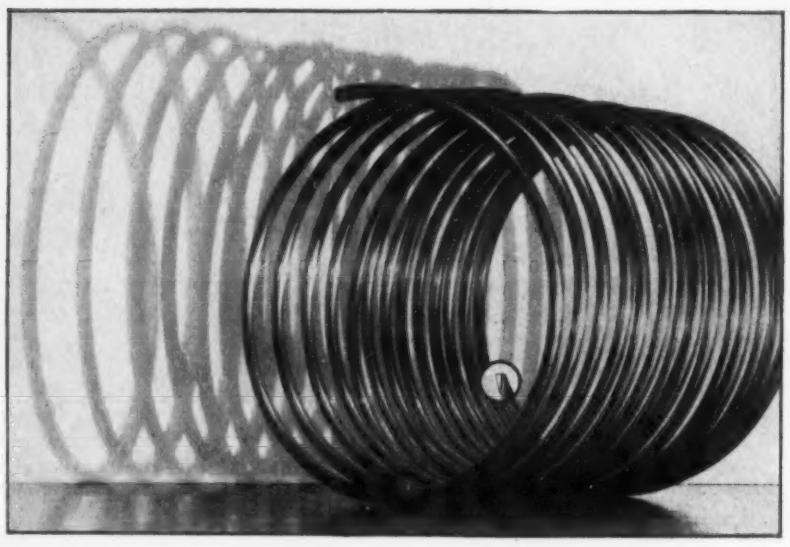
Grigsby-Grunow is seeking a type of equipment and a market that will lend themselves to the large-scale production and distribution methods which characterize the corporation's operations.

Inclined to Unit Type

In design, the equipment will probably be of the unit type, rather than the complete year 'round kind, Grigsby-Grunow engineers state.

The merchandising department is studying the market potentialities to determine whether or not the market will warrant large-scale production and distribution.

Considerable attention is also being given to the subject of the proper basis of distribution, that is, whether or not the unit type of air conditioner should be sold through specialty outlets, plumbing and heating contractors, or fan and ventilating equipment distributors.



FRENCH TUBES to fill every standard and special need

THERE ARE French Copper Refrigeration Tubes . . . small diameter and thin wall seamless tubes . . . for every refrigeration requirement.

Stock sizes are 1/4 in., 3/8 in., 7/16 in., 1/2 in., 5/8 in., and 3/4 in., all in .035 in. gauge. Heavier gauges can be made to order. Stock coils are 25, 50 and 100 feet long. Longer lengths can be supplied at short notice.

French Deluxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is *completely* dehydrated sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (commercially dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.

THE FRENCH MANUFACTURING CO.
General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

Properties of Sulphur Dioxide

Specifications of Sulphur Dioxide Given For Small Machines

By Chas. W. Johnston, Virginia Smelting Co., West Norfolk, Va.

SPECIFICATIONS for refrigeration-grade sulphur dioxide, the effects of sulphur dioxide on metals and oil, and some of the reasons why sulphur dioxide is used so extensively in small units are discussed at length in this article. The thermodynamic properties (1), the manufacture of sulphur dioxide (3), facts usually covered in folders (9), the testing of refrigeration-grade sulphur dioxide (7), and the question of toxicity are discussed briefly, for these points have been quite fully covered in other papers.

The thermodynamic properties of sulphur dioxide have long been known and appreciated. As those facts regarding it which have been discovered and demonstrated through experience in its actual use as a refrigerant become more widely known to engineers, it may well be that sulphur dioxide will be used in machines of increasingly larger capacity, and in more and more of the refrigerating equipment that is needed in industry.

Sulphur dioxide is not a new product. It has been known and used for many years, and was even mentioned by Homer. Priestley prepared it over mercury in 1775. Michael Faraday liquefied and solidified it. As a gas largely diluted with air, it is known to many, for it occurs in the air in volcanic regions and around smelters, acid plants, and chemical plants; in fact, it is present in the air wherever coal is burned, for practically all coal contains sulphur.

Sulphur dioxide is the gas formed by the burning of sulphur, and it was commonly used a few years ago for fumigation purposes, being obtained by the burning of sulphur candles or brimstone. Raoul Pictet used it as a refrigerant in France about 1875. The earliest German patent known to the author for making liquid sulphur dioxide was taken out in 1883.

Early Uses of SO_2

For many years sulphur dioxide was used in France and England as a refrigerant in machines for the making of ice; these machines had ice-making capacities of from 10 to 20 tons per day and perhaps larger. It is only during the past few years, with the large increase in production of the small unit, that sulphur dioxide has been used in this country to an important extent as a refrigerant. Probably 90 per cent of all these small units use sulphur dioxide.

One reason why these machines were not developed sooner may be that the sulphur dioxide available until the last few years was not of sufficient purity to make its use as a refrigerant in the small unit successful.

Properties of the Gas

Sulphur dioxide is a permanent gas. It is colorless, both in the liquid and gaseous state. It is nonexplosive, noninflammable, tends to put out a fire, and in case of contact with a fire is not decomposed into any harmful substances. Some of its properties are as follows:

Melting point (6), ° F.	−103.4
Boiling point (6), ° F.	14.00
Critical temp. (8), ° F.	311.7
Critical pressure (8), lb./sq. in. abs.	1159.8
Sp. heat of gas at constant pressure (8)	0.1544
Ratio of sp. heats (Cp/Cv) at 61-93° F. (8)	1.256
Sp. heat of liquid at 50° F.	0.35
Latent heat of vaporization at 1 atm., B.t.u./lb.	167
Density of liquid (water = 1) (6):	
At −40° F.	1.5331
At 14° F.	1.4601
At 50° F.	1.4095
Density of gas (at atm. pressure and 32° F.) (8):	
Grams per liter	2.9267
Referred to air as 1	2.2636
Lb. per cu. ft.	0.1827

The properties of saturated sulphur dioxide are shown in Table 1, above.

The volume of saturated vapor of sulphur dioxide to condense for one ton refrigeration (12,000 B.t.u. per hour) at different evaporator and condenser temperatures is as follows:

Evaporator Temperature ° F.	Condenser Volume at 70° F. Cu. ft/min.	Condenser Volume at 86° F. Cu. ft./min.	Condenser Volume at 100° F. Cu. ft/min.
30	4.825	5.012	5.185
25	5.390	5.599	5.793
20	6.066	6.302	6.526
15	6.829	7.102	7.344
10	7.715	8.017	8.297
5	8.741	9.084	9.402
0	9.939	10.329	10.594
− 5	11.340	11.786	12.202
−10	12.972	13.485	13.961

This article first appeared in the June, 1932, issue of Industrial and Engineering Chemistry, the publication of the American Chemical Society.

To get the required compressor displacement, divide the volume given above by the volumetric efficiency of the compressor, and correct for superheat, if any. The volumetric efficiency will vary from 44 per cent in small refrigerator compressors up to 90 per cent in large machines.

Example. The volume for one ton refrigeration, 20° F. in evaporator and 86° F. in condenser, is 6.302 cu. ft. per minute. Assume 80 per cent volumetric efficiency compressor and no superheat displacement required:

6.302=7.878 cu. ft. per minute
0.80

Liquid sulphur dioxide is manufactured in this country from brimstone, although it has been made in the past from smelter gases and is probably made from roaster gases in Europe. The usual method of manufacture is to absorb the sulphur dioxide from the sulphur burner or roaster in water, and then boil it out of the water by heating.

The water vapor is removed from this sulphur dioxide gas and the gas is compressed and cooled to the point where it becomes a liquid. The resulting product is purified for refrigeration in two different ways.

Two Methods of Purification

In some plants the final drying and purification is accomplished by passing the sulphur dioxide through sulphuric acid towers. In the plant of the Virginia Smelting Co., final drying and purification are accomplished by careful distillation. Either method yields a pure product.

A refrigerating machine is a device to absorb heat units at a comparatively low temperature, and radiate or discharge these same heat units at a higher temperature. For the work for which the small units are built, the temperatures at which heat units are to be absorbed and discharged are such that sulphur dioxide can be and is used advantageously because of its thermodynamic properties.

A temperature in the evaporator of about 14° F. (−10° C.) can be obtained without having a vacuum on the suction side of the machine. To avoid the possibility of leaks into a system that is not entirely sealed, it is desirable to keep the suction pressure above atmosphere.

Compressors can be built of iron and of comparatively light construction, for sulphur dioxide condenses at low pressures at the temperatures that can be readily secured even in air-cooled condensers of modest size built of copper.

Condensers Air-Cooled

Water-cooled condensers are not necessary with small units. If water-cooled condensers are used, they lower the condensing pressure, and this means also a smaller ratio of compression. The ratio of the pressure of a refrigerant in the evaporator to the pressure in the condenser is important for, in case this ratio becomes excessive, the efficiency of the compressor drops off, and there may be excessive heat generated in the compressor.

This point tends to place a limit on the use of sulphur dioxide at very low temperatures, but the difficulty might be overcome by the use of two-stage compression.

The low suction pressure of sulphur dioxide has the further advantage that the chance of leaks through the stuffing box and the consequent loss of the charge is less than it would be if the pressure were higher.

The latent heat of sulphur dioxide, affecting as it does the quantity of sulphur dioxide to be circulated for a given amount of refrigeration, has certain advantages in the small unit.

The amount of refrigerant required in any system depends on that system. In some of the small, compactly built units, 1.5 lbs. (0.71 kg.) are all that is needed or used.

With ammonia, sulphur dioxide gives a dense white, so-called smoke. Testing for leaks with ammonia is easy, simple, and very positive, and even extremely small leaks are disclosed by the test. The fact that sulphur dioxide is nonexplosive and noninflammable, and is not decomposed by fire into harmful substances is a real advantage to it as a refrigerant.

Lubrication is comparatively simple, and good inexpensive oils are available. Sulphur dioxide costs less than any other refrigerant. In the absence of water it has no corrosive action on metals. The toxic effect of sulphur dioxide has been an outstanding argument against it, but experience has developed a very large amount of information on this subject, some of which is cited later in this article.

Various specifications have been written to cover sulphur dioxide that is to be used as a refrigerant. These usually state that the sulphur dioxide shall be water-white in color and shall leave no residue on the evaporation of 100 cc.

A clean dry glass vessel in which a sample is evaporated should be just as clean and dry after the liquid sample has evaporated as it was before the sample was placed in it.

All the specifications limit the water content of the sulphur dioxide. In some, the limit is set at 100 p. p. m. and in some as low as 20 p. p. m.

Another point usually covered is the percentage of inert gases (largely air) which is usually limited to 0.01 per cent by volume. This means that, if a given quantity of the liquid is evaporated and the gas formed analyzed, it will show less than 1 volume of inert gas for 10,000 volumes of sulphur dioxide.

Very often the sulphur trioxide content of the sulphur dioxide is limited.

(Concluded on Page 5, Column 1)

Table 1—Properties of Saturated Sulphur Dioxide

Temp. ° F.	Pressure Lb./sq. in.	Volume Liquid Cu. ft./lb.	Volume Vapor Cu. ft./lb.	Heat of Liquid (Above −40° F.) B.t.u.	Latent Heat Internal B.t.u.	Latent Heat Total B.t.u.	Total Heat of Vapor B.t.u.	Entropy Liquid	Entropy Evaporation	Entropy Vapor
− 40	3.136	0.01044	22.42	0.00	165.57	178.61	178.61	0.000	0.4256	0.4256
− 20	5.883	0.01063	12.42	5.98	161.58	175.09	181.07	0.01366	0.3983	0.4119
0	10.35	0.01082	7.280	12.44	156.70	170.63	183.07	0.02795	0.3712	0.3992
20	17.18	0.01103	4.487	19.20	151.08	165.32	184.52	0.04241	0.3447	0.3871
40	27.10	0.01126	2.887	26.12	144.82	159.25	185.37	0.05668	0.3187	0.3754
60	40.93	0.01150	1.926	33.10	137.98	152.49	185.59	0.07060	0.2935	0.3641
80	59.68	0.01176	1.321	40.05	130.65	145.12	185.17	0.08399	0.2690	0.3529
100	84.52	0.01204	0.926	46.90	122.89	137.20	184.10	0.09657	0.2452	0.3417
120	120.93	0.01236	0.660	53.58	114.70	128.78	182.36	0.10829	0.2222	0.3305
140	158.61	0.01272	0.476	60.04	106.30	119.90	179.94	0.11893	0.1999	0.3189

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For Small Machine Work

(Concluded from Page 4, Column 5)

An investigation of the sulphur trioxide content of sulphur dioxide (which is difficult to determine accurately) was made at the Bureau of Standards(2).

An evaporation test of sulphur dioxide can be easily made because the rate of evaporation in an open glass is reasonably slow. The outside of the glass gradually becomes coated with ice. If the glass is placed in quiet air, an ordinary drinking glass of sulphur dioxide will usually require three hours or more to evaporate completely even with an air temperature of 80° F.

Evaporation Test

The liquid will usually appear quiescent with only slight signs of boiling after the first quick evaporation which takes place while drawing the sample. It should always be remembered in drawing a sample that sulphur dioxide takes up moisture from the air, and precautions must be used to guard against this if an accurate moisture test is to be made.

The problem of sampling, as well as the method of accurate analysis, has been so fully covered recently in an article by Scribner (7) that it is necessary only to mention that methods which give reliable and accurate results are now in use by manufacturers and purchasers of sulphur dioxide.

These give check results, and liquid sulphur dioxide, which by these tests passes requirement of refrigerating grades, can be used safely and satisfactorily for refrigeration purposes. Refrigeration-grade sulphur dioxide as shipped is ready to be used and is transferred to machines by charging directly from the containers in which it is shipped.

Refrigeration-grade sulphur dioxide does not attack metals used in refrigeration machines. Sulphur dioxide containing water above some small amount does attack metals. Just what amount of water there must be in the liquid sulphur dioxide before it begins to attack metals depends on several factors.

Action on Steel

Some few years ago the sulphur dioxide shipped in steel containers ran from 0.2 to 0.3 per cent water (2,000 to 3,000 p. p. m.), and little or no action on the cylinders occurred. Yet if a piece of bright steel is placed in liquid sulphur dioxide containing more than 60 p. p. m. of water (0.006 per cent) and allowed to remain in it until the liquid has entirely evaporated, the steel will show that it has been acted upon.

It is important, however, to note that this action occurs just as the last drops of the liquid sulphur dioxide evaporate. The steel remains bright and unattacked up to this time. The action is due to the fact that as the liquid sulphur dioxide contining water evaporates, the water does not evaporate at the same rate as the sulphur dioxide, but much more slowly.

The unevaporated sulphur dioxide is constantly increasing in water content, and the last drops contain a high percentage of water; they finally even become water containing sulphur dioxide, which is sulphurous acid. Sulphurous acid is very corrosive.

It is not only essential for successful operation to use sulphur dioxide with low moisture content, but care must be taken that the moisture content is not increased by addition of water from any source.

Machines Dehydrated

To avoid this introduction of water, machines are dried before charging, and dry oil is used. Where the water content of sulphur dioxide in the machine after charging is kept below 50 p. p. m. (0.005 per cent), not only is corrosion avoided, but also action on oil is reduced to a minimum.

Liquid sulphur dioxide dissolves certain oils and also is soluble in oils to varying degrees. The so-called carbonization of oils in the presence of sulphur dioxide is greatly increased by the presence of water. Local carbonization may result from sulphur dioxide containing over 0.006 per cent water at the point where the liquid sulphur dioxide entirely evaporates because of a concentration of water at that point.

Two other causes for carbonization of oils in the presence of sulphur dioxide are air and temperature. Machines are designed to run at reasonable temperatures, and, before charging, the air in them is carefully removed.

The questions of oil for use with sulphur dioxide and the action of sulphur dioxide on oils were recently covered in an article by the author (4).

Sulphur dioxide dissolves certain resins and other substances, and acts on rubber and other materials, so that it is necessary to be sure that any material used in a system that might come in contact with sulphur dioxide will not be affected by it.

Sulphur dioxide is absorbed by some metals; hence, the texture of iron, for example, used in compressors should be such that the sulphur dioxide will not filter through it. Leaks of this nature may not be noticed for many weeks, or even months, but once even the most minute leak of this kind does develop, it will become larger with great rapidity.

If sulphur dioxide escapes from a refrigeration system because of a leak in that system, its irritating effect makes its presence immediately known so that anyone breathing air containing it will immediately and naturally get out into the fresh air, away from the leak.

If for any reason sulphur dioxide is breathed, it is the experience of the author that only temporary discomfort is experienced and that exposure to very strong concentrations of sulphur dioxide rarely result in any permanent injury or serious after-effects.

The extent of irritation resulting from breathing air containing sulphur dioxide varies greatly with different individuals; those who are accustomed to breathing such air are able to stand concentrations which cause severe discomfort to those not accustomed to it.

Those connected with the Virginia Smelting Co. have repeatedly been exposed to and have breathed air containing much sulphur dioxide, and no after-effects are found.

Careful, periodic examinations of the men have failed to show any cumulative effects on them. The doctors who have examined them confirm that there are no such results (5).

Experience With Irritation

Where there have been severe irritations to the membranes of the nose and throat, the application of ephedrine sulphate has given very quick and positive relief; but, as a matter of fact, men familiar with sulphur dioxide almost never do anything about relieving any such irritation. Liquid sulphur dioxide in the eyes has caused freezing, but a number of men who have had such accidents have fully recovered (5).

Pictet has pointed out that pure sulphur dioxide gas, such as that formed when pure liquid sulphur dioxide evaporates, is decidedly different in its corrosive effects from the impure gas obtained from burning metallic sulfides or brimstone. He claimed that this impure gas contains various other oxides of sulphur mixed with the sulphur dioxide. The author's experience confirms what Pictet has claimed.

The men in the plant of the Virginia Smelting Co. find the impure burner gas quite different from and much more disagreeable than that formed by the evaporation of liquid sulphur dioxide. They take care to avoid contact with the burner gas much more than they do the pure sulphur dioxide from the liquid sulphur dioxide.

Liquid sulphur dioxide is an inexpensive refrigerant. It is made not only for this industry, but the commercial grade finds use in a rather wide field. This enables the manufacturers of the very fine refrigeration grade to dispose of larger quantities of less pure product produced in the course of manufacturing the refrigeration grade.

Commercial Uses

Some of the uses of the commercial grade are: the refining of oils; the making of chemicals, such as the hyposulphites (commonly called hydrosulphites); the bleaching of sugar; as an antichlor; for destroying excess chlorine in water which has been treated by the superchlorination method to prevent the formation of objectionable taste; the treatment of fruits, such as fresh grapes and cherries; and the making of sulphurous acid.

The figures on the production of liquid sulphur dioxide of the Census of Manufacturers for 1929 show that in that year there were four (perhaps five) plants in the United States producing liquid sulphur dioxide. The production was given as 11,958,842 lbs.

The rate of increased consumption, extending over the years up to 1929, has not been maintained during the past two years for two reasons, in addition to that incident to the general depression. One of these is that no new uses for the commercial grade requiring any considerable quantities of liquid sulphur dioxide have been developed; whereas during the years preceding 1929 commercial grade was required in tank car quantities to supply the demand for new uses of sulphur dioxide.

Decrease in Amount Per Unit

The other reason has been the continuous decrease in the quantity of the refrigeration grade used per unit, so that, although the number of units manufactured using liquid sulphur dioxide has been on the increase, the total pounds taken by the manufacturers is now little if any more than it was in 1929.

The sulphur dioxide plants are capable of producing much more than can be sold; in fact, probably one of these plants alone could produce all that is consumed in the United States.

Liquid sulphur dioxide is shipped in class V single-unit tank cars holding 40,000 lbs.; in ton containers which are shipped on special frames holding 15 as multiple-unit tank cars; and in steel cylinders of capacity varying from 150 lbs. down to those holding only three or four lbs.

Such shipments, when by rail or express, must be made in accordance with the provisions of the Interstate Commerce Commission and the Bureau of Explosives.

The most important precaution in shipping sulphur dioxide or in transferring it from one container to another is to avoid the possibility of overfilling any container. The liquid has a high coefficient of expansion with heat, and, in case any container is overfilled, the liquid pressure caused by an increase in temperature would either deform or burst the container.

To guard against this possibility, the Bureau of Explosives provides that no container may be filled to more than one and one-quarter times its water capacity.

This is a simple rule, and it is also the most important one in handling this commodity. To make sure of compliance with this provision, this company makes it a practice to have all containers weighed by two different men before shipment.

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Pyroxylin Lacquers More Healthful For Workers

WASHINGTON, D. C.—The general use of nitrocellulose or pyroxylin lacquers for spray painting and dipping has revolutionized the painting industry and has resulted in a change in working conditions with new health hazards and possible fire hazards from the volatile ingredients, according to the Monthly Labor Review published by the Bureau of Labor Statistics, Department of Labor.

All lacquer vapors are toxic, or at least narcotic, if inhaled in a sufficiently concentrated state for a long enough time, it was pointed out.

The diluents are considered the most harmful of the different constituents of lacquers, the principal one now in use being petroleum naphtha.

Until a few years ago, benzol was the principal diluent, but with an understanding of its extreme toxicity, it has been largely replaced by others.

A recent statement from the New York Department of Labor describes the composition of nitrocellulose lacquers and shows the relative hazards of the different constituents.

The ordinary lacquer contains five basic parts, having the following uses in the production of lacquer: (1) nitrocellulose, forming about 10 per cent of the lacquer, gives a waterproof quality, hardness and durability; (2) solvents and diluents, 77 per cent, dissolve the nitrocellulose and gums, and give quick drying properties; (3) gums or resins, 5 per cent, thicken the lacquer and increase its adhesive properties; (4) softeners or "plasticisers," 5 per cent, prevent brittleness; (5) pigments or coloring materials, 3 per cent, give color and add to the durability of the coating.

Nitrocellulose, prepared by treating cotton or some other form of cellulose with nitric acid, is made up in different types of compounds which vary as to solubility, viscosity, and nitrogen contents. These different types of nitrocellulose are used for coating different kinds of materials. They are highly flammable, are unstable, and if subjected to high temperatures are liable to spontaneous ignition, the report states.

FORT SHELBY HOTEL INSTALLS AIR COOLING

DETROIT — Three Sirocco Series O cooling units, manufactured by the American Blower Corp., have been installed in the main dining room of the Hotel Fort Shelby here, to cool, dehumidify, and circulate the air in the room. Each of the units has an air-cooling capacity of four tons of refrigeration in 24 hours.

Cold water from the water-cooling apparatus already installed in the hotel is circulated through the units as the cooling medium. A shell cooler, using carbon dioxide from the existing plant, was installed to increase the cold water supply of the hotel to meet the additional refrigeration demand, according to Norman Frahm, engineer of the hotel.

The new equipment lowers the temperature of the room approximately 5 to 7° F., and decreases the humidity approximately 10 per cent, on the average, the engineer says. Cost of the installation was less than $2,000. Operating costs are less than $100 per month, according to Frahm.

Plans are now being made to sink a well under the hotel to supply cold water for the cooling system next year, says the engineer. He believes that water from such a well, while unfit for drinking purposes, will have a temperature of 50° F. or less, and will be satisfactory for use in the cooling units.

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A Page for the Service and Installation Man

SERVICE HINTS

By FRANK W. GRAY

SERVICE departments were at first considered a necessary evil to refrigeration merchandising, and the only effort that was expended was to keep the service overhead as low as possible. Now that the electric refrigeration industry has progressed to a fairly high stage of distribution, there is no reason why the dealer should not plan to make his service department revenue producing.

The process of reorganization and change which has necessarily accompanied the development of this growing industry, has caused many manufacturers to be merged or eliminated, and many agencies to go out of business.

Servicing Orphaned Machines

This has left domestic and commercial machines without service in many localities. There is no reason why, when a sales agency goes out of business, another agency cannot compete with independent service agencies by obtaining the names of the users of the orphan machine, and announce to them that he is ready to render service at regular rates. Of course, it would be necessary to lay in a stock of replacement parts—in most cases these can be bought from the retiring agency.

Such a procedure would not only increase the business of the service department, but might lead to more sales since all users of electric refrigeration may be considered good sources for prospects. As one service foreman said "If we've got to have service, let's have plenty of it."

The progressive refrigeration service department can make use of a simple and inexpensive direct mail reminder in order to increase its overhaul business. If a record is available of all users, together with dates when each machine was last inspected or repaired, a post card can be mailed out to each customer at intervals of six months to one year calling his attention to the fact that his machine was last oiled and inspected on a certain date, and urging him to order another thorough oiling and inspection job in order to insure efficient operation and long life.

The wide-awake service department can also be very productive of new business. The service man has this advantage over the salesman: he is there to serve the customer's need, he is supposed to have intimate technical knowledge of the product, and therefore his recommendations are usually received with greater confidence by the customer.

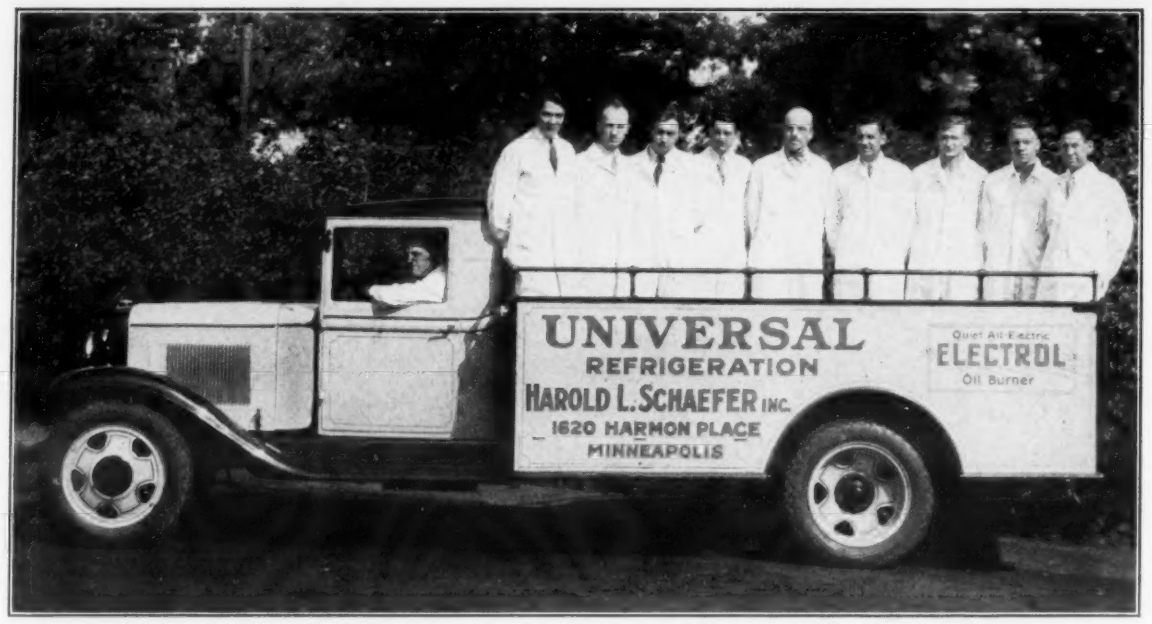
Suggest Additional Equipment

Not only can he be on the lookout for new prospects, but he can also recommend extensions and improvements of equipment to better advantage than can the salesman. There are a great many installations of refrigeration equipment—particularly commercial—which are today antiquated and inefficient in the light of more recent developments of manufacture and of installation methods.

The service man is the logical salesman to initiate such repeat business, since he contacts the previous customers in more of a disinterested capacity.

The usual reaction of the service man is that he cannot sell because he is untrained in that phase of the business. But if the service man will just forget entirely about the science of salesmanship—often over-estimated, by the way, as a science—and if he will visualize in words what improvements or extensions of equipment will benefit the customer, the order will generally take care of itself.

Speedy Service in Minneapolis



Well-dressed service staff of Harold L. Schaefer, Inc., Universal Cooler distributor in Minneapolis.

EXPLAIN ELIMINATION OF SWEAT ON MEATS

The problem of sweaty (or slimy) meats may come in the winter or it may come in the summer—in either event the cause is the same, namely, faulty circulation of air in the fixture.

Winter—When a customer complains of sweaty meats only in cold weather, it is almost always the result of an unheated store, the heat leakage between room temperature and box temperature being so small that the compressor is not required to run very much in order to maintain the correct box temperature.

Under these conditions the running time of the compressor is not sufficient to bring the coil temperature down to the required differential below box temperature to set up and maintain proper air circulation.

Remedial Methods

Suggested remedies are as follows:

1. Install small heating elements or lamps in the warm air flues.
2. Shut off part of the cooling coil area and lower the switch setting to allow the remaining coil area to operate at a colder temperature than before.
3. Open the door (or window) of the cooler slightly to allow more rapid heat leakage.

The last named suggestion is applicable only where the condition is not severe. Where the meat is sweating considerably, one of the other suggestions is recommended, preferably the first.

Summer—This condition in summer weather can usually be attributed to one of four causes as follows:

1. Improper baffles.
2. Blocked circulation due to improper placing of meats.
3. Coil temperature too high.
4. Too much cooling coil area.

Improper baffles may mean anything from the wrong type to no baffles at all, and is too lengthy a subject to be treated here.

Increasing Circulation

Blocked air circulation due to crowding the space in and around the air flues, especially if the coil temperatures are relatively high anyway, will prevent the normal amount of moisture being taken from the meat.

Circulation is in a great measure dependent upon the difference in temperature between the coil and the box—the greater the difference the more positive is the air movement.

If the average coil temperature is too near the box temperature, circulation will be insufficient to insure dry meats. The remedy, of course, is to bring the coil temperature down by setting the controls for a lower temperature.

Too much cooling coil area is sometimes responsible for sweaty meats due to the fact that the excess cooling area necessarily means a higher coil temperature for a given box temperature. Too much coil area is the exception rather than the rule, but when encountered requires a reduction in this area so that a colder coil temperature can be maintained without bringing the box temperature down too low.

On installations where pipe coils of the side wall type with no baffle construction are used, the box temperature should be carried at 33° to 35° and the controls set so that the pipe coils will operate as frosted coils. On the average pipe coil job the circulation is not positive enough to allow the coils to operate on a defrosting cycle. *The Servicaire*, Frigidaire Sales Corp. of New England.

Lehigh Lab Uses York Equipment

BETHLEHEM, Pa.—Complete ammonia and carbon dioxide refrigeration systems have been installed by the York Ice Machinery Corp. for experimental and test studies at Lehigh University, here. Auxiliary equipment is also included for both plants.

The purpose of this experimental plant and set-up in the refrigeration laboratory is for supplementing the course in refrigeration, by practical demonstration and various experiments, to familiarize the students with the cycle of operation and principles of modern refrigerating engineering.

All the refrigerating equipment and auxiliaries were designed by York engineers; the insulated test rooms by the Armstrong Cork Co. At present, the mechanical equipment consists of the following items:

1—4x4-in. ammonia compressor (belt driven).
1—1¾x4-in. CO_2 compressor (belt driven).
1—Double pipe ammonia condenser.
2—Calibrating ammonia receivers.
1—Shell and tube brine cooler.
1—Brine storage tank.
1—Brine circulating pump.
1—Double pipe CO_2 condenser.
1—Shell and tube CO_2 condenser with surge drum, arranged for ammonia cooling CO_2 condenser.
1—Atmospheric type heat exchanger with collecting plan.
1—Water storage tank and water circulating pump.

This equipment is arranged so that it may be used in connection with two test rooms, one an ante-room, 6 ft. 4 in. wide by 7 ft. 10 in. long, and the other, a cold room, 7 ft. 2 in. wide and 12 ft. 2 in. long.

The ante-room is provided with gravity feed coils, using ammonia for the refrigerant. The cold room is arranged with two sets of coils; one set arranged for operating with ammonia as the refrigerant, to hold the room around zero, the other set of coils arranged for use with CO_2 as a refrigerant to maintain a temperature as low as –50° F.

York float control provides a flooded condition and constant level of the refrigerant in the coils, in order to obtain operation of the compressor at the highest suction pressure.

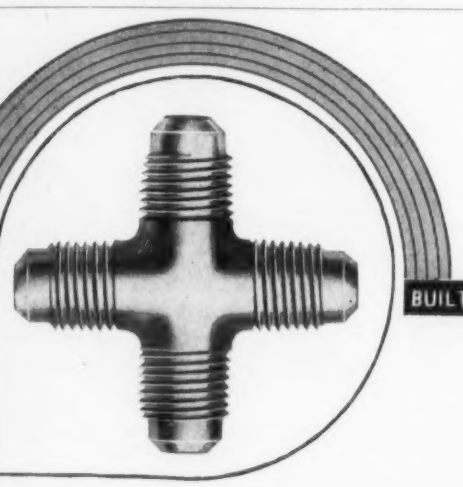
When the CO_2 compressor is operating on the coils, the ammonia compressor will either operate on the brine cooler, which will cool the brine for the brine cooled CO_2 condenser, or it will operate directly on the ammonia cooled condenser.

The CO_2 compressor may also be operated with the double pipe condenser using water as the cooling medium. Under this combination an atmospheric type heat exchanger is utilized to maintain temperature control of the condensing water.

ELECTRICAL INSPECTORS TO MEET SEPT. 26-29

NEW YORK CITY—The annual convention of the Eastern Section, International Association of Electrical Inspectors, will be held at the Hotel New Yorker here, Sept. 26-29.

A. Lincoln Bush is chairman of the general convention committee and Joseph C. Forsyth is honorary chairman. The business program is rapidly taking a definite form, as are also arrangements for entertainment.



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Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Digest of Recent Refrigeration Patents

(Continued from Last Issue)

1,868,434. REFRIGERATOR OF THE ABSORPTION TYPE. Adolf Silbernagel, Basel, Switzerland. Filed Oct. 26, 1929. Serial No. 402,657, and in Switzerland Nov. 12, 1928. 3 Claims. (Cl. 62—120.5.)

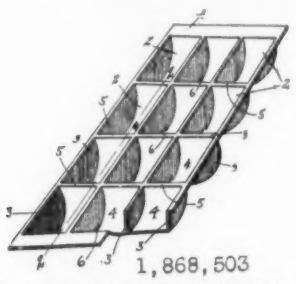
3. In a refrigerator of the absorption type, the combination of an absorber-generator, a vaporizer, a condenser, and a tube connecting the absorber-generator to the vaporizer, the condenser being connected to said tube, a small open vessel within the vaporizer, within which the said tube ends, and being provided in its lower part with a small opening for the discharge of condensed refrigerant upon the liquid in the vaporizer, and a tube extension extending from said vessel to the lowest part of the vaporizer and projecting into and communicating at its upper end with said vessel, the portion thereof exterior of the vessel, being freely exposed to the medium in said vaporizer so that, after the cessation of boiling and owing to the higher temperature prevailing in said medium than in said tube, a gas development takes place in said tube, producing a great, pump-like action on the contents within the tube and vessel.

ISSUED JULY 26, 1932

1,868,495. REFRIGERATOR. Frederick Einermann, Ramsey, N. J. Filed Oct. 14, 1931. Serial No. 568,661. 4 Claims. (Cl. 312—149.)

1. The combination of a drawer apertured at opposite sides thereof and having a front closure, a containing structure for the drawer having an opening through which the drawer is withdrawable and normally closed by the drawer, a roller journaled in the forward portion of the drawer, a flexible connection wound on the roller and connected to said structure and having the parts thereof embracing the roller forming a partition, and means normally urging the roller in the rotative direction to wind said connection thereon, said roller being arranged so that when the drawer is withdrawn and the partition unwinds the latter will obstruct flow of air through the projecting part of the drawer from one of its apertured sides to the other.

1,868,503. ICE TRAY FOR MECHANICAL REFRIGERATORS. George H. Kennedy, Jr., Worcester, Mass. Filed April 4, 1929. Serial No. 352,562. 14 Claims. (Cl. 62—108.5.)



1,868,503

1. As a new article of manufacture, an ice tray or receptacle for use in mechanical refrigerators, and formed with an ice space or cavity having substantially vertical sides, connected by a concave bottom in the form of a surface of revolution of sufficient angular extent to permit turning or rocking movement of the ice block formed in said space or cavity.

1,868,611. EBULLITION INITIATOR. Lawrence W. Larsen, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Dec. 16, 1927. Serial No. 240,395. 2 Claims. (Cl. 62—126.)

2. In a refrigerating system, an evaporator header adapted to be partly filled with liquid, means providing a plurality of refrigerant passages communicating with the header, and a hollow member provided with securing means on its external surface, said securing means being adapted to cooperate with at least one of said refrigerant passages for securing the hollow member in

COMPRESSOR MOUNTING

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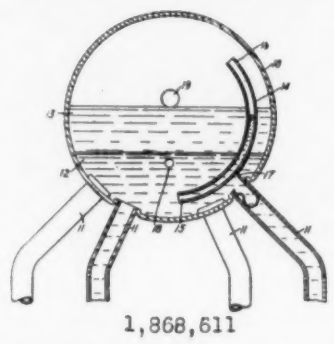


1,868,611

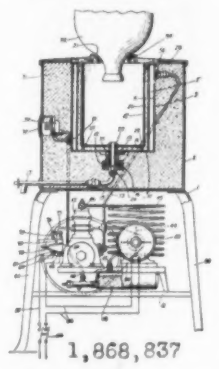
position with one extremity above the liquid and the other below the liquid.

1,868,755. DEHYDRATOR. William D. Mount, Lynchburg, Va. Filed Oct. 20, 1930. Serial No. 489,967. 9 Claims. (Cl. 62—121.)

3. The method of dehydrating carbon dioxide gas in the preparation of solid carbon dioxide which comprises mixing the gas to be dehydrated with cold gas taken from the expansion chamber, and separating the gas from the frozen moisture.

1,868,763. REFRIGERATING DEVICE. Henry S. Raymond, Waterloo, Iowa. Filed May 17, 1930. Serial No. 453,228. 6 Claims. (Cl. 62—51.)

1,868,837. DRINKING WATER COOLING AND DISPENSING APPARATUS. Benjamin Markus, Oak Park, Ill., assignor to Henry P. Watson, Minneapolis, Minn. Filed Jan. 16, 1929. Serial No. 332,966. 5 Claims. (Cl. 62—141.)



1,868,837

5. A device of the class described comprising a receptacle having a conducting liquid therein, and having double walls defining an expansion chamber, means connected with the expansion chamber for producing refrigerating effects therein, and a non-metallic water reservoir within said receptacle and substantially submerged in said liquid.

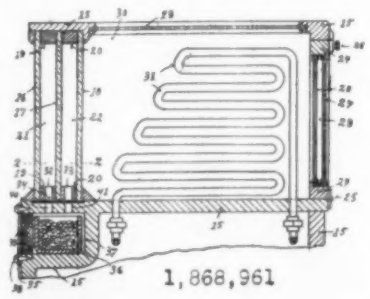
1,868,882. ICELESS REFRIGERATOR. Lorn Campbell, Jr., Lakewood, Ohio. Filed Sept. 11, 1929. Serial No. 391,762. 3 Claims. (Cl. 62—114.)

3. An iceless refrigerating apparatus comprising a casing having a refrigerating chamber therein, a freezer unit adapted to be inserted into and removed from said chamber, the said unit having a base, a cylindrical receptacle extending vertically upward from the base of said unit, a stirring shaft mounted in the cylinder and extending vertically upward from the base thereof, a cover for the top of the said receptacle through which the upper end of the said shaft extends, reduction gearing carried by said cover for driving the said shaft, the said unit having a front wall forming a closure for the front of the refrigerating chamber, and a motor carried by the front wall of the said unit arranged to drive the said reduction gearing.

1,868,907. REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Oct. 31, 1928. Serial No. 316,274. 9 Claims. (Cl. 62—95.)

4. A refrigerating element for cooling air flowing thereover, said element including header means for liquid refrigerant, a plurality of vertically extending serpentine evaporator chambers having the outlets thereof connected with the header means and having the inlets thereof at the lower ends, fin means below the header thermally connected with said chambers, and down flow duct means connecting the inlets with the header means, said duct means being disposed so as to be thermally protected from relatively warm circulating air.

1,868,961. REFRIGERATING APPARATUS. Edwin J. Ahrens, Cincinnati, Ohio, assignor, by mesne assignments to Rueben Eli Ottenheimer, Baltimore, Md. Filed Aug. 24, 1929. Serial No. 388,138. 3 Claims. (Cl. 183—4.)



1,868,961

1. In a refrigerated show-case a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels defining an interposed substantially sealed air space, a chamber containing a dehydrating substance located in the wall of said casing having a port leading therefrom to said substantially sealed air spaces and an entrance from one face of the casing wall, a lid detachably attached to the face of said casing to close the entrance to said dehydrating chamber and readily releasable lever mechanism operable to hold said lid detachably in place, the port leading from said air space to said dehydrating chamber being of sufficient capacity to maintain a circulation of air to and fro from said air space to said dehydrating chamber.

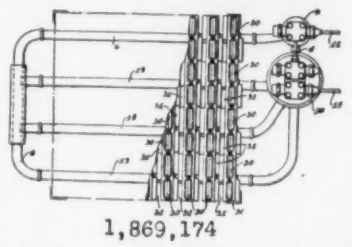
1,869,119. MECHANICALLY REFRIGERATED CABINET. John R. Replogle, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Sept. 8, 1927. Serial No. 218,174. 1 Claim. (Cl. 62—116.)

In a mechanically refrigerated food storage cabinet, a frame structure provided with a heat insulated storage chamber having an open top, an open top liquid containing receptacle in said chamber for storing removable food containers, a lid for closing the top opening in said frame structure, an evaporator in said receptacle for maintaining the liquid at a predetermined temperature, and means in said liquid receptacle for supporting said evaporator and for dividing the receptacle into a plurality of sections for the disposition of food containers.

1,869,173. EVAPORATOR FOR MECHANICAL REFRIGERATION. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed July 29, 1929. Serial No. 381,974. 3 Claims. (Cl. 62—95.)

2. An evaporator comprising a closed cylindrical liquid refrigerant containing vessel having inlet and outlet ports, a cast metal structure formed with an interior compartment and a top wall complementary to and coextensive with the vessel, said vessel seating in the recess in the top wall, and detachable means clamping the vessel to the metal structure, said means including straps formed with ends extending above the vessel adapted to be secured to a supporting wall.

1,869,174. HEAT TRANSFER DEVICE. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed April 17, 1930. Serial No. 445,120. 5 Claims. (Cl. 257—256.)



1,869,174

1. A fin for indirectly transferring heat comprising a sheet of metal having two parallel intermediate portions provided with spaced slits and bent outwardly therefrom alternately on opposite sides forming parallel flues, and having opposite edges bent outwardly therefrom on the same side, the fin portion between the parallel portions having a tube opening therethrough.

1,869,195. METHOD AND APPARATUS FOR ASSEMBLING DISKS OR FINS ON TUBES. William F. Healy, Boston, Mass., assignor to B. F. Sturtevant Co., Boston, Mass., a Corporation of Massachusetts. Filed Oct. 14, 1926. Serial No. 141,593. 15 Claims. (Cl. 153—80.5.)

1. A method of assembling apertured disks or fins which consists in mounting a plurality of disks in axial and angular alinement upon a tube, clamping the disks in fixed spaced relation lengthwise of the tube, clamping the tube at intervals throughout its length, and forcing an expanding tool through the tube.

2. An apparatus for assembling apertured integral disks on tubes having, in combination, means for alining the disks axially, opposed rows of combined positioning and clamping means to loosely receive and position the disks at spaced intervals and to clamp the disks in their initial position, and devices for positively actuating said last mentioned means.

1,869,346. APPARATUS FOR CONTINUOUS PRODUCTION OF CARBON DIOXIDE ICE. William T. Comer, Atlanta, Ga., assignor to Crystal Carbonic Laboratory, Atlanta, Ga., a Corporation of Georgia. Filed Dec. 28, 1929. Serial No. 417,153. 5 Claims. (Cl. 62—121.)

1. Apparatus for producing carbon dioxide ice which comprises, in combination, a chamber inwardly tapering toward an outlet, alternate elongated projections and depressions upon the inner surface of said chamber substantially parallel with the axis thereof, a jet for introduction of liquid carbon dioxide into the chamber opening through the crest of one of said projections, screw means revolubly mounted in said chamber the edge of the thread thereof revolving closely adjacent the crests of said projections.

TRADEMARKS

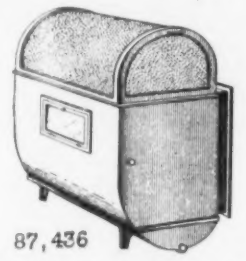
Ser. No. 326,383. McKee Refrigerator Co., Cobleskill, N. Y. Filed April 22, 1932.

McKEE REFRIGERATORS

The drawing is lined for shading. The word "Refrigerators" is disclaimed except as in combination with the remaining part of the trade mark. For Ice Boxes and Refrigerators. Claims use since Jan 12, 1932.

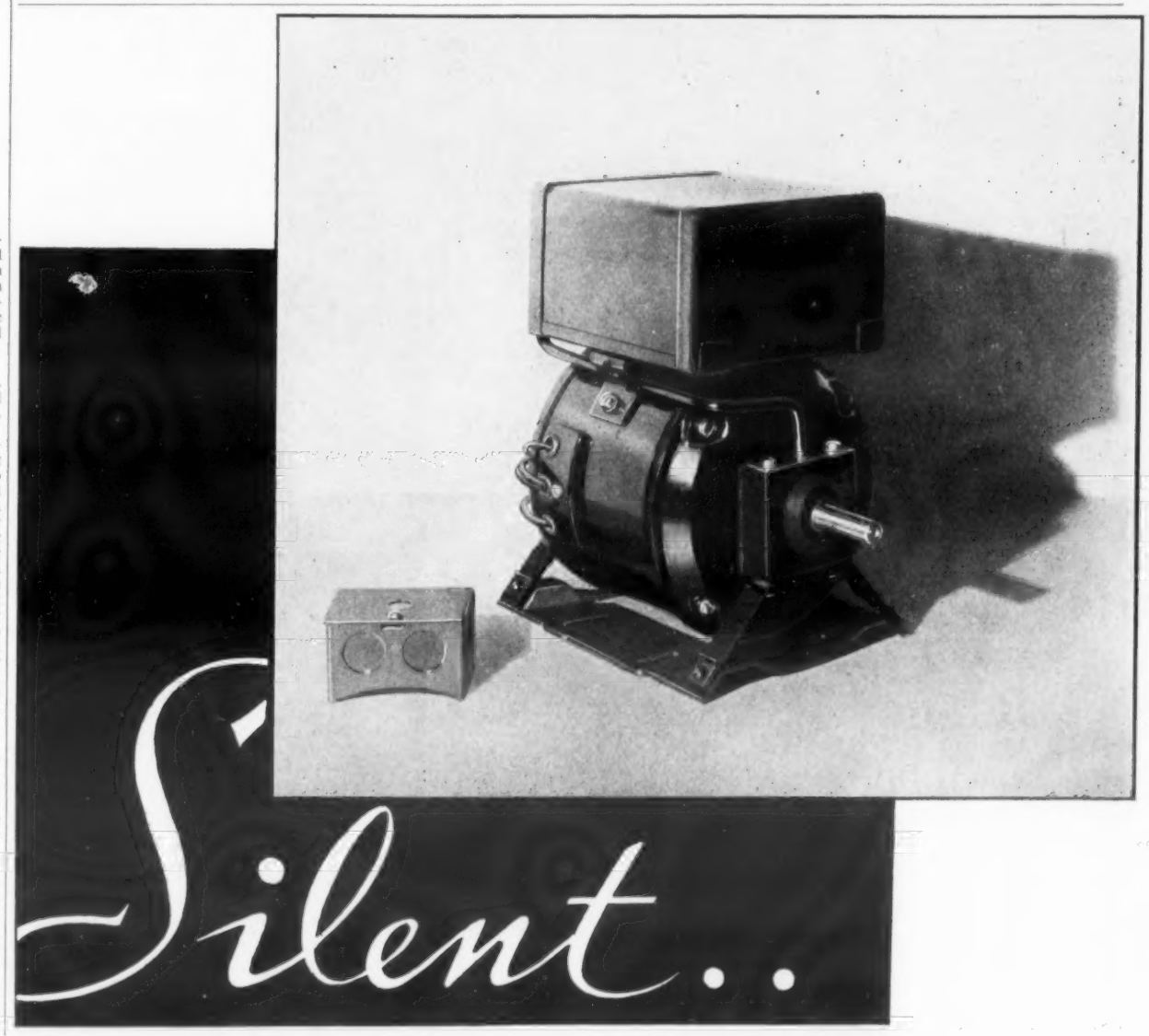
DESIGNS

87,436. AIR CONDITIONING UNIT. Earl Vernon Hill, Chicago, Ill. Filed May 21, 1932. Serial No. 43,868. Term of patent 14 years.



87,436

The ornamental design for an air conditioning unit, as shown and described.



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A Page for the Service and Installation Man

SERVICE HINTS

By FRANK W. GRAY

SERVICE departments were at first considered a necessary evil to refrigeration merchandising, and the only effort that was expended was to keep the service overhead as low as possible. Now that the electric refrigeration industry has progressed to a fairly high stage of distribution, there is no reason why the dealer should not plan to make his service department revenue producing.

The process of reorganization and change which has necessarily accompanied the development of this growing industry, has caused many manufacturers to be merged or eliminated, and many agencies to go out of business.

Servicing Orphaned Machines

This has left domestic and commercial machines without service in many localities. There is no reason why, when a sales agency goes out of business, another agency cannot compete with independent service agencies by obtaining the names of the users of the orphan machine, and announce to them that he is ready to render service at regular rates. Of course, it would be necessary to lay in a stock of replacement parts—in most cases these can be bought from the retiring agency.

Such a procedure would not only increase the business of the service department, but might lead to more sales since all users of electric refrigeration may be considered good sources for prospects. As one service foreman said "If we've got to have service, let's have plenty of it."

The progressive refrigeration service department can make use of a simple and inexpensive direct mail reminder in order to increase its overhaul business. If a record is available of all users, together with dates when each machine was last inspected or repaired, a post card can be mailed out to each customer at intervals of six months to one year calling his attention to the fact that his machine was last oiled and inspected on a certain date, and urging him to order another thorough oiling and inspection job in order to insure efficient operation and long life.

The wide-awake service department can also be very productive of new business. The service man has this advantage over the salesman: he is there to serve the customer's need, he is supposed to have intimate technical knowledge of the product, and therefore his recommendations are usually received with greater confidence by the customer.

Suggest Additional Equipment

Not only can he be on the lookout for new prospects, but he can also recommend extensions and improvements of equipment to better advantage than can the salesman. There are a great many installations of refrigeration equipment—particularly commercial—which are today antiquated and inefficient in the light of more recent developments of manufacture and of installation methods.

The service man is the logical salesman to initiate such repeat business, since he contacts the previous customers in more of a disinterested capacity.

The usual reaction of the service man is that he cannot sell because he is untrained in that phase of the business. But if the service man will just forget entirely about the science of salesmanship—often over-estimated, by the way, as a science—and if he will visualize in words what improvements or extensions of equipment will benefit the customer, the order will generally take care of itself.

Speedy Service in Minneapolis

Well-dressed service staff of Harold L. Schaefer, Inc., Universal Cooler distributor in Minneapolis.

EXPLAIN ELIMINATION OF SWEAT ON MEATS

The problem of sweaty (or slimy) meats may come in the winter or it may come in the summer—in either event the cause is the same, namely, faulty circulation of air in the fixture.

Winter—When a customer complains of sweaty meats only in cold weather, it is almost always the result of an unheated store, the heat leakage between room temperature and box temperature being so small that the compressor is not required to run very much in order to maintain the correct box temperature.

Under these conditions the running time of the compressor is not sufficient to bring the coil temperature down to the required differential below box temperature to set up and maintain proper air circulation.

Remedial Methods

Suggested remedies are as follows:

1. Install small heating elements or lamps in the warm air flues.
2. Shut off part of the cooling coil area and lower the switch setting to allow the remaining coil area to operate at a colder temperature than before.
3. Open the door (or window) of the cooler slightly to allow more rapid heat leakage.

The last named suggestion is applicable only where the condition is not severe. Where the meat is sweating considerably, one of the other suggestions is recommended, preferably the first.

Summer—This condition in summer weather can usually be attributed to one of four causes as follows:

1. Improper baffles.
2. Blocked circulation due to improper placing of meats.
3. Coil temperature too high.
4. Too much cooling coil area.

Improper baffles may mean anything from the wrong type to no baffles at all, and is too lengthy a subject to be treated here.

Increasing Circulation

Blocked air circulation due to crowding the space in and around the air flues, especially if the coil temperatures are relatively high anyway, will prevent the normal amount of moisture being taken from the meat.

Circulation is in a great measure dependent upon the difference in temperature between the coil and the box—the greater the difference the more positive is the air movement.

If the average coil temperature is too near the box temperature, circulation will be insufficient to insure dry meats. The remedy, of course, is to bring the coil temperature down by setting the controls for a lower temperature.

Too much cooling coil area is sometimes responsible for sweaty meats due to the fact that the excess cooling area necessarily means a higher coil temperature for a given box temperature. Too much coil area is the exception rather than the rule, but when encountered requires a reduction in this area so that a colder coil temperature can be maintained without bringing the box temperature down too low.

On installations where pipe coils of the side wall type with no baffle construction are used, the box temperature should be carried at 33° to 35° and the controls set so that the pipe coils will operate as frosted coils. On the average pipe coil job the circulation is not positive enough to allow the coils to operate on a defrosting cycle. *The Servicaire*, Frigidaire Sales Corp. of New England.

Lehigh Lab Uses York Equipment

BETHLEHEM, Pa.—Complete ammonia and carbon dioxide refrigeration systems have been installed by the York Ice Machinery Corp. for experimental and test studies at Lehigh University, here. Auxiliary equipment is also included for both plants.

The purpose of this experimental plant and set-up in the refrigeration laboratory is for supplementing the course in refrigeration, by practical demonstration and various experiments, to familiarize the students with the cycle of operation and principles of modern refrigerating engineering.

All the refrigerating equipment and auxiliaries were designed by York engineers; the insulated test rooms by the Armstrong Cork Co. At present, the mechanical equipment consists of the following items:

1—4x4-in. ammonia compressor (belt driven).
1—1¾x4-in. CO_2 compressor (belt driven).
1—Double pipe ammonia condenser.
2—Calibrating ammonia receivers.
1—Shell and tube brine cooler.
1—Brine storage tank.
1—Brine circulating pump.
1—Double pipe CO_2 condenser.
1—Shell and tube CO_2 condenser with surge drum, arranged for ammonia cooling CO_2 condenser.
1—Atmospheric type heat exchanger with collecting plan.
1—Water storage tank and water circulating pump.

This equipment is arranged so that it may be used in connection with two test rooms, one an ante-room, 6 ft. 4 in. wide by 7 ft. 10 in. long, and the other, a cold room, 7 ft. 2 in. wide and 12 ft. 2 in. long.

The ante-room is provided with gravity feed coils, using ammonia for the refrigerant. The cold room is arranged with two sets of coils; one set arranged for operating with ammonia as the refrigerant, to hold the room around zero, the other set of coils arranged for use with CO_2 as a refrigerant to maintain a temperature as low as -50° F.

York float control provides a flooded condition and constant level of the refrigerant in the coils, in order to obtain operation of the compressor at the highest suction pressure.

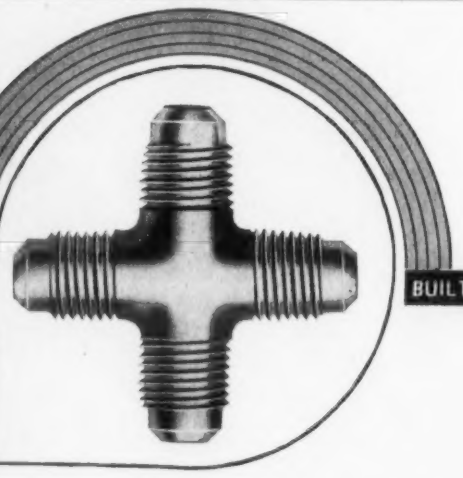
When the CO_2 compressor is operating on the coils, the ammonia compressor will either operate on the brine cooler, which will cool the brine for the brine cooled CO_2 condenser, or it will operate directly on the ammonia cooled condenser.

The CO_2 compressor may also be operated with the double pipe condenser using water as the cooling medium. Under this combination an atmospheric type heat exchanger is utilized to maintain temperature control of the condensing water.

ELECTRICAL INSPECTORS TO MEET SEPT. 26-29

NEW YORK CITY—The annual convention of the Eastern Section, International Association of Electrical Inspectors, will be held at the Hotel New Yorker here, Sept. 26-29.

A. Lincoln Bush is chairman of the general convention committee and Joseph C. Forsyth is honorary chairman. The business program is rapidly taking a definite form, as are also arrangements for entertainment.



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Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Digest of Recent Refrigeration Patents

(Continued from Last Issue)

1,868,434. REFRIGERATOR OF THE ABSORPTION TYPE. Adolf Silbernagel, Basel, Switzerland. Filed Oct. 26, 1929. Serial No. 402,657, and in Switzerland Nov. 12, 1928. 3 Claims. (Cl. 62—120.5.)

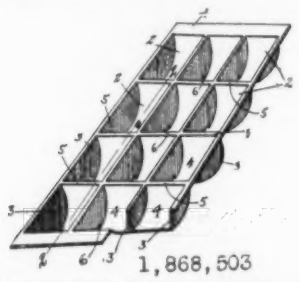
3. In a refrigerator of the absorption type, the combination of an absorber-generator, a vaporizer, a condenser, and a tube connecting the absorber-generator to the vaporizer, the condenser being connected to said tube, a small open vessel within the vaporizer, within which the said tube ends, and being provided in its lower part with a small opening for the discharge of condensed refrigerant upon the liquid in the vaporizer, and a tube extension extending from said vessel to the lowest part of the vaporizer and projecting into and communicating at its upper end with said vessel, the portion thereof exterior of the vessel, being freely exposed to the medium in said vaporizer so that, after the cessation of boiling and owing to the higher temperature prevailing in said medium than in said tube, a gas development takes place in said tube, producing a great, pump-like action on the contents within the tube and vessel.

ISSUED JULY 26, 1932

1,868,495. REFRIGERATOR. Frederick Einermann, Ramsey, N. J. Filed Oct. 14, 1931. Serial No. 568,661. 4 Claims. (Cl. 312—149.)

1. The combination of a drawer apertured at opposite sides thereof and having a front closure, a containing structure for the drawer having an opening through which the drawer is withdrawable and normally closed by the drawer, a roller journaled in the forward portion of the drawer, a flexible connection wound on the roller and connected to said structure and having the parts thereof embracing the roller forming a partition, and means normally urging the roller in the rotative direction to wind said connection thereon, said roller being arranged so that when the drawer is withdrawn and the partition unwinds the latter will obstruct flow of air through the projecting part of the drawer from one of its apertured sides to the other.

1,868,503. ICE TRAY FOR MECHANICAL REFRIGERATORS. George H. Kennedy, Jr., Worcester, Mass. Filed April 4, 1929. Serial No. 352,562. 14 Claims. (Cl. 62—108.5.)



1,868,503

1. As a new article of manufacture, an ice tray or receptacle for use in mechanical refrigerators, and formed with an ice space or cavity having substantially vertical sides, connected by a concave bottom in the form of a surface of revolution of sufficient angular extent to permit turning or rocking movement of the ice block formed in said space or cavity.

1,868,611. EBULLITION INITIATOR. Lawrence W. Larsen, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Dec. 16, 1927. Serial No. 240,395. 2 Claims. (Cl. 62—126.)

2. In a refrigerating system, an evaporator header adapted to be partly filled with liquid, means providing a plurality of refrigerant passages communicating with the header, and a hollow member provided with securing means on its external surface, said securing means being adapted to cooperate with at least one of said refrigerant passages for securing the hollow member in

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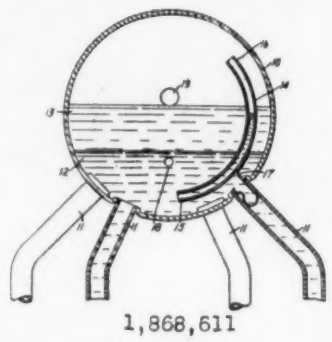

1,868,611

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1,868,755. DEHYDRATOR. William D. Mount, Lynchburg, Va. Filed Oct. 20, 1930. Serial No. 489,967. 9 Claims. (Cl. 62—121.)

3. The method of dehydrating carbon dioxide gas in the preparation of solid carbon dioxide which comprises mixing the gas to be dehydrated with cold gas taken from the expansion chamber, and separating the gas from the frozen moisture.

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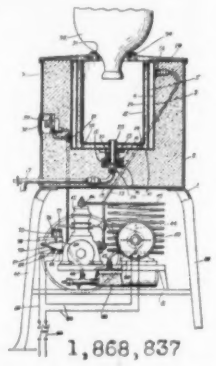
1,868,837. DRINKING WATER COOLING AND DISPENSING APPARATUS. Benjamin Markus, Oak Park, Ill., assignor to Henry P. Watson, Minneapolis, Minn. Filed Jan. 16, 1929. Serial No. 332,966. 5 Claims. (Cl. 62—141.)



1,868,837

5. A device of the class described comprising a receptacle having a conducting liquid therein, and having double walls defining an expansion chamber, means connected with the expansion chamber for producing refrigerating effects therein, and a non-metallic water reservoir within said receptacle and substantially submerged in said liquid.

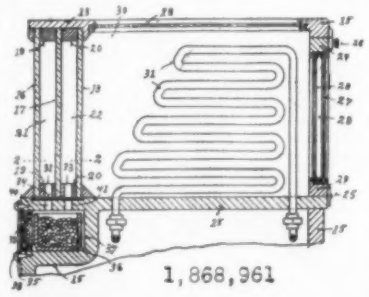
1,868,882. ICELESS REFRIGERATOR. Lorn Campbell, Jr., Lakewood, Ohio. Filed Sept. 11, 1929. Serial No. 391,762. 3 Claims. (Cl. 62—114.)

3. An iceless refrigerating apparatus comprising a casing having a refrigerating chamber therein, a freezer unit adapted to be inserted into and removed from said chamber, the said unit having a base, a cylindrical receptacle extending vertically upward from the base of said unit, a stirring shaft mounted in the cylinder and extending vertically upward from the base thereof, a cover for the top of the said receptacle through which the upper end of the said shaft extends, reduction gearing carried by said cover for driving the said shaft, the said unit having a front wall forming a closure for the front of the refrigerating chamber, and a motor carried by the front wall of the said unit arranged to drive the said reduction gearing.

1,868,907. REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Oct. 31, 1928. Serial No. 316,274. 9 Claims. (Cl. 62—95.)

4. A refrigerating element for cooling air flowing thereover, said element including header means for liquid refrigerant, a plurality of vertically extending serpentine evaporator chambers having the outlets thereof connected with the header means and having the inlets thereof at the lower ends, fin means below the header thermally connected with said chambers, and down flow duct means connecting the inlets with the header means, said duct means being disposed so as to be thermally protected from relatively warm circulating air.

1,868,961. REFRIGERATING APPARATUS. Edwin J. Ahrens, Cincinnati, Ohio, assignor, by mesne assignments to Rueben Eli Ottenheimer, Baltimore, Md. Filed Aug. 24, 1929. Serial No. 388,138. 3 Claims. (Cl. 183—4.)



1,868,961

1. In a refrigerated show-case a casing enclosing a refrigerated chamber, a window to display the contents of said refrigerated chamber comprising a plurality of transparent panels defining an interposed substantially sealed air space, a chamber containing a dehydrating substance located in the wall of said casing having a port leading therefrom to said substantially sealed air spaces and an entrance from one face of the casing wall, a lid detachably attached to the face of said casing to close the entrance to said dehydrating chamber and readily releasable lever mechanism operable to hold said lid detachably in place, the port leading from said air space to said dehydrating chamber being of sufficient capacity to maintain a circulation of air to and fro from said air space to said dehydrating chamber.

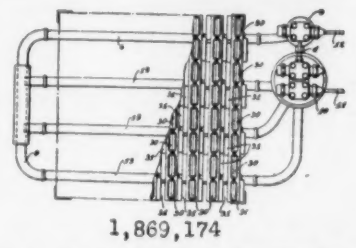
1,869,119. MECHANICALLY REFRIGERATED CABINET. John R. Replogle, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Sept. 8, 1927. Serial No. 218,174. 1 Claim. (Cl. 62—116.)

In a mechanically refrigerated food storage cabinet, a frame structure provided with a heat insulated storage chamber having an open top, an open top liquid containing receptacle in said chamber for storing removable food containers, a lid for closing the top opening in said frame structure, an evaporator in said receptacle for maintaining the liquid at a predetermined temperature, and means in said liquid receptacle for supporting said evaporator and for dividing the receptacle into a plurality of sections for the disposition of food containers.

1,869,173. EVAPORATOR FOR MECHANICAL REFRIGERATION. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed July 29, 1929. Serial No. 381,974. 3 Claims. (Cl. 62—95.)

2. An evaporator comprising a closed cylindrical liquid refrigerant containing vessel having inlet and outlet ports, a cast metal structure formed with an interior compartment and a top wall complementary to and coextensive with the vessel, said vessel seating in the recess in the top wall, and detachable means clamping the vessel to the metal structure, said means including straps formed with ends extending above the vessel adapted to be secured to a supporting wall.

1,869,174. HEAT TRANSFER DEVICE. Franklin G. Slagel, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc., Buffalo, N. Y., a Corporation of New York. Filed April 17, 1930. Serial No. 445,120. 5 Claims. (Cl. 257—256.)



1,869,174

1. A fin for indirectly transferring heat comprising a sheet of metal having two parallel intermediate portions provided with spaced slits and bent outwardly therefrom alternately on opposite sides forming parallel flues, and having opposite edges bent outwardly therefrom on the same side, the fin portion between the parallel portions having a tube opening therethrough.

1,869,195. METHOD AND APPARATUS FOR ASSEMBLING DISKS OR FINS ON TUBES. William F. Healy, Boston, Mass., assignor to B. F. Sturtevant Co., Boston, Mass., a Corporation of Massachusetts. Filed Oct. 14, 1926. Serial No. 141,593. 15 Claims. (Cl. 153—80.5.)

1. A method of assembling apertured disks or fins which consists in mounting a plurality of disks in axial and angular alinement upon a tube, clamping the disks in fixed spaced relation lengthwise of the tube, clamping the tube at intervals throughout its length, and forcing an expanding tool through the tube.

2. An apparatus for assembling apertured integral disks on tubes having, in combination, means for alining the disks axially, opposed rows of combined positioning and clamping means to loosely receive and position the disks at spaced intervals and to clamp the disks in their initial position, and devices for positively actuating said last mentioned means.

1,869,346. APPARATUS FOR CONTINUOUS PRODUCTION OF CARBON DIOXIDE ICE. William T. Comer, Atlanta, Ga., assignor to Crystal Carbonic Laboratory, Atlanta, Ga., a Corporation of Georgia. Filed Dec. 28, 1929. Serial No. 417,153. 5 Claims. (Cl. 62—121.)

1. Apparatus for producing carbon dioxide ice which comprises, in combination, a chamber inwardly tapering toward an outlet, alternate elongated projections and depressions upon the inner surface of said chamber substantially parallel with the axis thereof, a jet for introduction of liquid carbon dioxide into the chamber opening through the crest of one of said projections, screw means revolubly mounted in said chamber the edge of the thread thereof revolving closely adjacent the crests of said projections.

TRADEMARKS

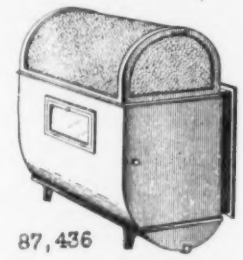
Ser. No. 326,383. McKee Refrigerator Co., Cobleskill, N. Y. Filed April 22, 1932.

McKEE REFRIGERATORS

The drawing is lined for shading. The word "Refrigerators" is disclaimed except as in combination with the remaining part of the trade mark. For Ice Boxes and Refrigerators. Claims use since Jan 12, 1932.

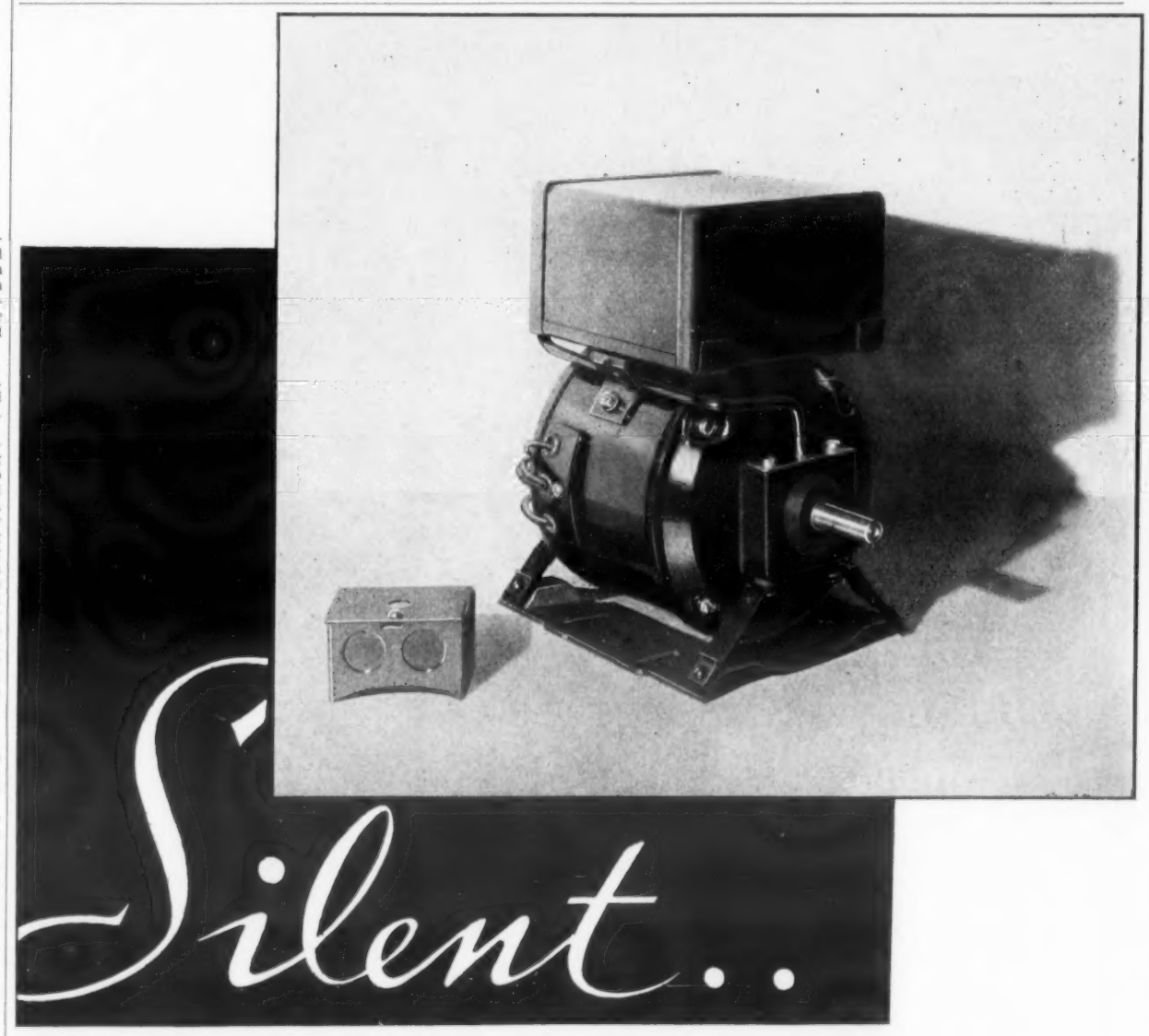
DESIGNS

87,436. AIR CONDITIONING UNIT. Earl Vernon Hill, Chicago, Ill. Filed May 21, 1932. Serial No. 43,868. Term of patent 14 years.



87,436

The ornamental design for an air conditioning unit, as shown and described.



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